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An index to the eighty-fifth volume of The Railway Gazette *covering the issues from July 5 to December 27, 1946, has been prepared, and is now available free of charge on application to the publisher*

DIESEL RAILWAY TRACTION

The February issue of this Railway Gazette *Publication, illustrating and describing developments in Diesel Railway Traction, is now ready, price 2s.*

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THE RAILWAY GAZETTE

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The Transport Bill in Committee

THE Transport Bill was dealt with for the first time before a Standing Committee at the House of Commons on Tuesday last. A very great number of amendments has been tabled for consideration at this stage. It was early made clear that the Minister of Transport was determined to push forward consideration of the Bill as fast as possible. He proposed that the Committee should meet three mornings every week, and although this was resisted, finally it was agreed that the Committee should meet on Tuesday, Wednesday, and Thursday mornings. A summary of the proceedings at the first day's sitting is given elsewhere in this issue. An endeavour by the Opposition to increase the number of members of the Transport Commission was defeated by the Government, although members stressed the burden which would be placed on the Chairman and four other members of the Commission in view of the immensity and complexity of the problems with which they would have to deal. The Minister said that the Commission was to be essentially a body for making policy decisions, and should not encumber itself with details of management or operation. Members should be full-time, and they would not be tied down to any particular fields of experience. There was nothing to prevent the Minister from drawing, not only on the capacity of persons in this country, but on those of the Dominions or anywhere else.

* * * *

Locomotive Manufacturers' New President

On Thursday last week leading representatives of the British locomotive manufacturing industry met at dinner to pay tribute to Mr. F. S. Whalley, M.C., who has been President of the Locomotive Manufacturers' Association of Great Britain for ten years, and who relinquished that office on December 31, 1946. He has been succeeded by Mr. Harold Wilmot, of whom a portrait and some biographical details appear elsewhere in this issue. Mr. Whalley's tenure of office has covered a difficult period in the industry both before the war, during it, and in the period after it. The factors with which the industry had to contend were different in each of these three periods, but it would be hard to judge which of them called for greater skill or more statesmanlike counsel in their solution. It was clear at the dinner that Mr. Whalley had earned a high place in the regard of his fellow locomotive builders. Increasing calls on his time will not mean that his counsels are less available to the industry with which he has been associated so long, and in which the company with which he has most intimately associated holds so high a place. Mr. Wilmot will bring to the office of President those powers of enterprise and initiative for which he is well known in the industry.

* * * *

Midland Bank's Expansion of Overseas Trade

The Marquess of Linlithgow, in his statement to shareholders of the Midland Bank Limited, devoted some time to the place of banking in the furthering of international business. This was, perhaps, natural, because the Midland was the pioneer among joint stock banks in entering the foreign exchange field on its own account. In view of the paramount need for increasing our overseas trade, it is gratifying to know that the staff of the Overseas Branch, together with the special branches in provincial centres closely identified with foreign trade, and which had shrunk from about 700 in 1939 to well under 300 in 1944, has expanded rapidly since the end of the war. Indeed, although that staff is now appreciably larger than in 1939, it is heavily strained to cope with the volume of work it now has to handle. A further pointer in the same direction is the fact that the amount of Midland Bank confirmed credits and acceptances outstanding, which naturally declined to very small figures during the war, now is several times what it was in 1938. The resumption of overseas travel, which is also an indispensable part of the strategy of the export campaign, also has brought more business to the Midland Bank, for in the last half-year the issue of travellers' cheques was twice as large in number as for the second half of 1938. The Midland Bank now has a specialised advisory service to traders conducting foreign business which is very valuable, both to the trader and to the country as a whole.

A Swiss View of the Transport Bill

Elsewhere in this issue we publish some comments on the Transport Bill from a correspondent who lives in Switzerland and who has had long associations with transport in that country. He states that experience in Switzerland has shown that from both the technical and economic viewpoints it is better to keep all secondary railways under private management, and he adds that the present feeling in Switzerland is adverse to further nationalisation, which has proved costly, and has made necessary subsidising of the railways. An interesting point brought out by this correspondent is that one of the principal causes of the unsatisfactory financial railway position in Switzerland arises from the heavy service charges which are the result of the capital being composed entirely of fixed interest-bearing bonds. There is little doubt that one of the major causes of the unfortunate financial position of certain of the British railways, after the grouping in 1923, also was that of the high proportion of fixed interest and prior charge capital. One need cite only the unfortunate experience over many years of the deferred and preferred ordinary stockholders of the London & North Eastern Railway.

* * * *

British Investments in Argentina

According to statistics compiled by the *South American Journal*, there was an improvement in the position of British investments in Argentina during 1946. There was a decline of £4,673,672 to £356,212,589 in the total investment, but the average return rose from 2·6 to 2·8 per cent. On the other hand, 51·5 per cent. or £183,682,729 of the total received no interest, which is a slightly higher proportion than was shown a year earlier. In the railway group of investments, the amount invested is shown for last year as £252,131,866, which compares with £252,298,117 for 1945. The interest received was £5,861,178 or 2·3 per cent., which was rather more than the £5,331,965 or 2·1 per cent. paid in respect of 1945. The aggregate capital which received no remuneration last year was £156,477,984, which compared with £153,439,365 in the previous year.

* * * *

Our Present State Railways

With the nationalisation of the collieries, the country has become possessed already of some hundreds of miles of State railway, apart altogether from lines within the collieries, some of them carrying a limited public traffic, and, in at least one case, passenger traffic. The Coal Industry Bill became an Act of Parliament on July 12, 1946, but it was on the vesting date (January 1, 1947) that the properties passed from private to national ownership. Railways and rolling stock are not included in the global compensation sum of £164,660,000 which is to be apportioned among the 800 or so separate colliery undertakings, but are to be paid for as ancillary assets, to be valued in respect of each unit. In the counties of Durham and Northumberland alone, there are upwards of 125 miles of "main-line" colliery railways, including such well-known ones as the Bowes (Pontop & Jarrow), the Hetton, the Pelaw Main, the Cramlington, the Backworth, and the Seaton Burn Railways. Moreover, the South Shields, Marsden & Whitburn Colliery Railway carries a regular public passenger traffic both on weekdays and Sundays between South Shields (Westoe Lane) and Marsden, and this presumably now constitutes the first State passenger railway in Great Britain!

* * * *

Brunel's Timber Viaducts

It will be recalled that Collegewood Viaduct, near Falmouth, the last of Brunel's 67 timber viaducts in the West of England remained in use until July 21, 1934, and thus failed by six months to survive into the centenary year of the Great Western Railway. At that time, however, examples of this remarkable design were still to be found in South Wales. An illustration of one of the last two timber viaducts on the system appears on page 166 of this issue. These viaducts are situated at Dare and Gamlyn, on the Dare branch of the former Vale of Neath Railway, and were constructed in 1855, to carry the railway over deep valleys near Aberdare. They are 70 ft. high and 450 and 600 ft. long respectively. With the closing of the branch to regular traffic on September 1, 1939, they became redundant, and are now being dismantled. Some 25,000 cu. ft. of valuable timber will be salvaged, and made available for a variety of purposes.

* * * *

Railway Abandonment in the U.S.A.

Abandonments of railways in the U.S.A. were not recorded before 1917 in the form of annual statistics, primarily because such lines as were abandoned were unimportant, and were usually railways built to serve mineral or other natural resources that had been worked out. In 1917, however, a total of 942 route-miles was abandoned, and since that time annual statistics have been issued. During the 30-year period to the end of 1946, a total of 31,807 miles has been abandoned, which averages almost 1,060 miles a year. The annual figures are as follow:—

MILES OF LINES ABANDONED IN THE U.S.A. SINCE 1916

Year	Miles	Year	Miles	Year	Miles
1917	942	1927	282	1937	1,140
1918	959	1928	512	1938	1,897
1919	637	1929	475	1939	1,783
1920	536	1930	694	1940	1,299
1921	1,626	1931	795	1941	1,509
1922	677	1932	1,452	1942	2,516
1923	513	1933	1,876	1943	1,096
1924	693	1934	1,995	1944	640
1925	606	1935	1,843	1945	412
1926	457	1936	1,523	1946	423

During the same period of 30 years, only 10,984 miles of new lines have been built, leaving a net decrease of 20,823 in the total railway mileage of the country, or an average net reduction of about 694 miles a year.

* * * *

Railway-Associated Air Services

On February 1, the Associated Airways Joint Committee handed over to the British European Airways Corporation the various railway-associated air undertakings, which include Railway Air Services Limited, Great Western & Southern Air Lines Limited, Isle of Man Air Services Limited, and Scottish Airways Limited. R.A.S. itself was formed jointly by the four main-line railways and Imperial Airways on March 21, 1934, and during 1936 Coast Lines Limited obtained a shareholding interest with representation on the Board. The Associated Airways Joint Committee was set up in May, 1940, and consists of representatives of eight companies (including some that are not operators of regular services), to work approved wartime air services under an agreement with the Secretary of State for Air. The British Overseas Airways Corporation succeeded Imperial Airways Limited on April 1, 1940, as the officially-sponsored organisation. Government policy for postwar British air transport, as outlined in December, 1945, provided for B.O.A.C. to concentrate on long-distance routes; and for British European Airways Corporation (a new formation) to operate routes between the United Kingdom and the Continent, as well as internal routes in the United Kingdom. The timetables dated October 7, 1946, showed the various erstwhile railway-sponsored services as operated by their old companies, but as agents for B.E.A.

* * * *

Education for Road Transport: Progress Report

The first annual report of the National Standing Joint Committee on Road Transport Education, which comprises representatives of industrial and educational organisations and individual members, recently has been published; since the report was compiled the National Union of Railwaymen has joined the Committee and is represented by Mr. W. J. Slack. With the object of giving the scheme the widest publicity, various local committees have been set up in a number of centres during the year, including Aberdeen, Edinburgh, Glasgow, Manchester, and Yorkshire, and classes have been started in these centres. A local committee has been formed for the London area, and classes have been organised in ten Metropolitan centres. One problem with which the Committee is faced is the shortage of textbooks, for not only is there a lack of books because of the paper shortage, but subjects are not adequately covered by existing publications, although it is hoped to arrange for papers to be contributed which might form the basis of new books. Examinations were held by the Royal Society of Arts in first-year subjects for the first time under the scheme. There were 462 entries and 76 per cent. of the papers completed were awarded first and second

class certificates. Mr. R. W. Birch and Mr. C. F. King were elected Chairman and Hon. Secretary of the Committee, respectively, to fill vacancies caused by the resignation of Mr. R. Stuart Pilcher and Mr. F. W. Crews. Major R. A. B. Smith was elected Vice-Chairman.

* * * *

Three-Point Bearing Turntables Favoured in U.S.A.

On the American Continent the increasing length of locomotives is causing balanced turntables to be abandoned in favour of those of the three-point bearing type. Correct balance is essential on the balanced type, and increased wheelbase makes this more difficult. On account of the irregular weight distribution in some locomotives, balance is impossible, and diesels, with their wider wheel spacing, increase the problem of working and maintaining balanced tables. In some cases, when such locomotives move on to a table, the leading bogies pass the centre before the trailing bogies reach the table, with the result that the approach end of the table tips up and the trailing wheels then strike the ends of the rails on the table, tending to drive them forward, and also causing a thrust upon the turntable centre. Maintenance costs are adversely affected, and the centres, circles, and steelwork generally are subjected to loads for which they are not designed. The lack of tipping in a three-point table eliminates these difficulties, and conversion offers no serious obstacles, even if lengthening is included.

* * * *

Scottish Colliery Railways and Ports

In earlier years of the Scottish coal trade, a distinctive feature was the use of the private railway and harbour. The last of these was dispensed with in August of last year, and thus was broken an interesting association with a bygone stage of the industry. This was the Fordell Railway, linking Fordell Colliery, near Dunfermline, in Fife, with the small harbour of St. David's, which lies about a mile to the east of the Forth Bridge on the Firth of Forth. It was a single-line railway of 4 ft. 4 in. gauge, and some four miles of this line leading to the harbour now have been dismantled and the harbour closed. The line was reconstructed with iron rails in 1833 to 1838 to replace a considerably earlier wooden wagonway on a slightly different route, shown on a map of 1775, and built a decade or more earlier. The railway was again reconstructed, with steel rails, in 1866 to 1868, and in the latter year locomotives were first used. Latterly, the line has been used solely for the carriage of coal, the last cargo of which was shipped from St. David's in August, 1946. With changing times, the proportion of the colliery output shipped at St. David's had declined to under 9 per cent. in 1940-45, so that the working of the harbour and railway had become uneconomic and extravagant in manpower.

* * * *

New 2-8-2 Locomotives for India

The fulfilment of a large order, for no less than 110 locomotives of the 2-8-2 type, with double bogie tenders, has been undertaken by the North British Locomotive Co. Ltd., for the India Store Department. This firm, including the companies which were amalgamated to form it in 1903, now has delivered 6,400 locomotives to Indian railways in nearly ninety years, between 1857 and 1946. The new engines, which are known as the "XD" class, and are described and illustrated elsewhere in this issue, are generally similar to the existing examples of this type, but the opportunity has been taken to effect certain modifications and improvements. The chief new features are the fitting of a "Joco" regulator and of double-curve arch tubes in the firebox; the provision of cast-iron barrel liners for the cylinders; the substitution of hand-operated sanding gear for the Lambert system; the replacement of a Cartazzi trailing truck by a pony truck of the radial-arm type; and the change from the Goodall drawbar to one of ordinary pattern between engine and tender. All crankpins now have floating bushes; and Timken bearings make a welcome appearance on all the carrying wheels. It is to be hoped that at an early date they will be fitted also on the coupled axles. The cab is arranged attractively, and the design in general is simple and straightforward. Perhaps a cautious conservatism dictated a boiler pressure of 180 lb. per sq. in., which, though once a favourite figure in this country, generally is exceeded now for main-line work.

Compensation under the Transport Bill

IN a speech delivered at Gateshead on February 1, Mr. H. Dalton is reported to have said that the exact figure of compensation under the Transport Bill would not be known until vesting day—January 1 next. Putting the annual interest on Government stocks at about £25,500,000, there would be a saving of about £19,000,000 a year, available to cheapen fares, give better transport, and improve working conditions.

The Chancellor of the Exchequer's figures appear to leave out of account the deficiency which is bound to exist in the 1946 account between the Government and the controlled railway undertakings. The public is kept in the dark about the state of this account, but information divulged at sittings of the Charges Consultative Committee last autumn indicated that the taxpayers might have to meet a deficit in the region of £10,000,000. To avoid a similar state of affairs at the end of 1947, the Minister of Transport has authorised the London Passenger Transport Board to raise its fares as from February 9, and is considering how far the main-line railways need increase their charges so as to make ends meet. Even if we waive any question about the build-up of the so-called saving, this is hardly the time for a member of the Government to hold out hopes that nationalisation will bring cheaper travel and benefits for the staff.

Before the war, the railways carried in a good year about 660,000,000 ordinary passengers, who paid £46,800,000 in fares—an average of about 1s. 6d. These ordinary fares have been increased in the after-war period by 33⅓ per cent. To restore them to the old level would cost over £15,000,000 a year and would involve concessions to workmen and season-ticket holders. Inevitably, also, traders would insist on reductions in freight rates, which produced a revenue of about £90,000,000 a year from the peacetime volume of traffic. These rates were advanced by 25 per cent. in July last, and many of them might revert to a lower basis with benefit to the industrial recovery of the country. In that event, Mr. Dalton's ill-gotten gains would disappear long before money could be used for improving either transport facilities or working conditions.

The immediate outlook has been clouded recently both for trade and industry and for the railways. Even if full supplies are ample after Easter, the trends of passenger and goods traffic may be downwards. He would be a brave prophet who would venture to forecast the railway position in 1948. Should a surplus then exist, the correct course will be for the Commission to recommend to the Minister of Transport how it should be applied. The difficulties of the Commission in starting the new regime will be immense and will not be lightened if declarations, made lightheartedly for political purposes, encourage the people to expect cheap and easier travel to follow hotfoot on state ownership and lead the staff to count on better working conditions being provided with a lavish hand.

* * * *

Railway Ports and Docks

IN *The Times* of February 1, there was published a letter from Sir Frederick J. West, President, Dock & Harbour Authorities Association, dealing with the position of ports and docks under the Transport Bill. His main argument was directed to the vital necessity of leaving those ports and docks which are now managed by public trusts under local autonomy, instead of bringing them under State ownership and centralised control. The shipowners and traders using these docks will, we imagine, support Sir Frederick's contention, but he proceeded to urge that the railway ports, which will be taken over by the Transport Commission on January 1, 1948, should be brought under the trust system of management within two years of the date of vesting. Somewhat illogically, he says that the change "would have the great advantage of securing broad uniformity in dock control throughout the country." In the absence of the centralised control, which Sir Frederick West opposes, it is difficult to see what advantage would be derived from outward uniformity of local control.

At the present time there is a real danger of our being influenced unduly by abstract dogma in settling matters which should be handled as commercial transactions. Railway ports, docks, and wharves are situated, often at wide distances, round our coast from the Firth of Forth to the West of Scotland. Differing greatly in size and character, these shipping centres

are designed primarily to deal with traffic by rail. Quite a number of them was acquired from independent dock authorities who had not the resources or enterprise to develop trade over their quays. At other points, the bulk of the business is done by railway steamships. It seems premature to suggest that port facilities of such a varied nature should be transferred post haste from the railway managements to outside bodies. The wise course will be to let the railway docks continue on the existing basis until the Commission has time to judge the propriety of altering the organisation at any port, not on theoretical grounds, but to achieve economy and efficiency.

* * * *

German Work on Gas Turbines for Traction Purposes

A SURVEY of the attempts made in Germany to develop gas turbines for rail and road traction, especially towards the end of the war, has been published by the Institution of Mechanical Engineers, and is given in abridged form elsewhere in this issue. The author is Lt.-Colonel Bright, who, after being attached to the Inspectorate of Fighting Vehicles during the recent war, was posted to the 21st Army Group H.Q. on technical liaison work, and later became Chairman of Group V (Automotive Group) of the British Intelligence Objectives Subcommittee. The author outlines the attractions of simple and cheap construction, and the prospect of being able to use fuel of low quality, whilst considerably increasing the power/weight and power/volume ratios, which led the Germans to make a great effort to develop suitable gas turbines for rail and road transport. The Germans expected that a wide potential field existed for these prime movers as soon as a satisfactory state of development had been reached. Two main varieties were considered, one having a single turbine both to drive the compressor and to provide the output of useful work, and the other having two separate turbines, one for each of those two duties.

It is evident that the German engineers were concerned primarily with the application of gas turbines to tanks and military vehicles. For this reason they concentrated on mechanical transmission, and were designing units of relatively small output (*e.g.*, 1,000 h.p. and 320 h.p.). For railway traction, larger units normally will be required, and the problem of control and transmission can best be solved by employing electric drive. In this respect the recent Swiss developments with gas turbine traction appear to be of more immediate value to railway mechanical engineers.

* * * *

The Wooden Sleeper

SOME of the advocates of steel or concrete sleepers have been inclined to challenge the accuracy of our remark (in our November 22 issue) that the wooden sleeper is, and for many years is likely to remain, the standard and by far the most widely used in practically every country. Most engineers will agree that in almost every respect it is still the most satisfactory type, with which no other can compare for resilience and cushioning of the track. Economic conditions have given an added attraction to alternative types of sleeper in special circumstances, and availability of supply has often proved a deciding factor. Before the recent war, steel sleepers were used widely in some parts of Germany, but timber elsewhere, and here the main factors were relative nearness to forest supplies or to steelworks, and periodical desires to support the German steel industry during times when work was slack.

In tropical countries, where wood is vulnerable to attack by insects, cast iron or steel have particular local attractions, but, even in India before the recent war about half the 50,000 miles or so of railway track was on wooden sleepers and half on metal (cast iron or steel) sleepers. Both gave excellent results. In areas where corrosion was severe, wood was found preferable, whereas, where satisfactory wood was scarce or expensive, the case for metal was so much the stronger. The standard broad-gauge wooden sleeper in India is 9 ft. × 10 in. × 5 in.

In the U.S.A. in 1911, the average of the renewals for 22 railways was 262 wooden sleepers a mile per annum. In 1935 the corresponding figure was but 95 sleepers a mile per annum. Increased use of creosoting was the chief cause of this 64 per cent. drop in annual sleeper renewals in the quarter of a century between 1911 and 1935. The estimated annual saving on one railway was $2,300,000 on 10,000 miles of track, and on another railway it was $4,500,000 on 18,000 miles. The creosoted wooden sleeper in the United States of America has proved so cheap, and has lasted and performed so well, that there has been no such recourse to metal sleepers as in India, and the extension of creosoting, by increasing the life of the wooden sleeper, has offset the rising cost of labour. In earlier years in the U.S.A., materials and labour were sufficiently cheap to make replacement less costly than impregnation.

In Great Britain, before 1940, the railways were able to secure at a reasonable price a very high grade of imported softwood sleeper, mainly from the Baltic. Properly impregnated with creosote, this type of sleeper has given excellent results. The U.S.A., on the other hand, uses a much lower grade of sleeper, often boxed-heart oak, but with good creosoting and clamping, also secures excellent results.

In the present difficult conditions in Great Britain, with shortages of metal and labour as well as of wood, there is a case for trying to improve the performance of the wooden sleeper by even more attention to its grading, seasoning, and preservative treatment. Some creosoted sleepers made of home-grown timbers have given good results on British railways during the last twenty years, and there may be scope for greater use of this home-grown material in the future. As the forests planted in Great Britain after the first world war (and later) mature, it should be possible to provide larger supplies of timber suitable for sleepers, and so gradually ease the burden of purchase abroad.

* * * *

An American Railway Revolt

A REMARKABLE situation has been created in the United States by the withdrawal from the Association of American Railroads of the Chesapeake & Ohio Railroad and its associated companies, the New York, Chicago & St. Louis (or "Nickel Plate," as it is generally known) and the Pere Marquette. As a result of board meetings of the three railways, notice of the withdrawal was given to the A.A.R. on October 15, to take effect after the expiration of 90 days. The retiring companies have intimated that they will continue to bear their share in the cost of the Car Service Division, the Mechanical Division, and the Bureau of Explosives of the A.A.R., and that they will continue to be parties to certain inter-railway agreements connected with passenger and freight car service and interchange, but nothing more.

Behind this policy is Mr. Robert R. Young, Chairman of the Chesapeake & Ohio, who has come much into prominence in recent years as a result of his propaganda in the American Press. He was one of the first to urge the introduction of through coast-to-coast sleeping car service, so that the change of train previously inevitable at Chicago or St. Louis for all passengers travelling across the continent from east to west or *vice versa* might be eliminated. Eventually this persistent advocacy bore fruit, and the New York Central, Pennsylvania, and Baltimore & Ohio companies all now have through sleeping cars running from New York and Washington to the Pacific coast, as well as to the south-western states, though the Chesapeake & Ohio itself has no share in their movement. Mr. Young also claims that his company took the leading part in eliminating the black market in train space reservations, with saving to the railways and benefit to the public.

In their notice of withdrawal, the three companies contend that the lead in such matters should have been taken by the Association of American Railroads rather than by individual companies. They allege, moreover, that there is too much domination of the Association by certain of the larger companies and also by the banks, and that, as one result, freight rates have been established which are discriminatory against the south and west of the U.S.A. Another allegation is that there is far too much use of obsolete equipment, and that competitive technological development has been discouraged: also that development has been hampered by too close relations between officials of the railways and the suppliers of their equipment.

In particular, the continued use on so widespread a scale of the older convertible type of Pullman sleeping car, with its lack of privacy, has come under fire. On the other side, while it is true that section sleepers are still by far in the majority,

as compared with individual room cars, this last attack makes insufficient allowance for the complete hold-up in car construction caused by the war, and for the fact that some 2,600 new passenger vehicles are now on order for United States railways, many of which will be sleeping cars of the latest type. Several of the leading railways aim at the complete re-equipment of practically all their principal passenger services, and receipt of the cars now on order will make this plan possible.

It cannot be said that Mr. Young lacks the energy to practice what he is preaching with such vigour. In many directions the companies of his group are launching out into methods of attracting the public which are novel in the United States. One is the new "pay-as-you-go" system of seat reservation, referred to in an editorial note on p. 370 of the October issue of *The Railway Gazette*, whereby the intending passenger may telephone in advance for a coach seat or for Pullman space, and may go direct to the train without an interminable wait at a ticket window, paying the collector on board for his ticket. A second is the introduction of a credit card system for Chesapeake & Ohio travellers; this will enable any financially responsible individual to apply for and receive a credit with the railway which will be available instead of cash in payment for tickets.

As to travel comfort, the C. & O. group's new Pere Marquette all-coach diesel streamline trains have many new features in comfort and service, including the complete abolition of tipping, which are to be extended to other parts of the system. A total of 291 new cars is on order, sufficient to transform all the principal C. & O. passenger trains, and to provide four additional streamline services, which are to be powered by Baldwin-Westinghouse steam turbine-electric locomotives of an entirely new design. Each of these trains will include a motion picture theatre, news ticker and library service, and art and industrial exhibits. One coach will be devoted to family travel, and a matron and a passenger representative will travel with each train. It is of interest that the two Pere Marquette streamliners already have increased passenger business over the route concerned (Detroit to Grand Rapids, Mich.) by 74 per cent., and present indications are that they will earn some $1,250,000 in a full year. These trains are described and illustrated on page 160.

* * * *

The Life of an Engine Driver

MUCH has been written about the sense of frustration experienced by those who are forced to spend a lifetime in an uncongenial job. Nearly 50 years ago, a boy of 14 appeared to be destined to spend his working life as a coal merchant's clerk, and the prospect was not alluring. The lad's heart was on the railway; he wanted to be an engine driver; and he lost no time in realising his ambition. A quick decision and a bold plunge carried him into the locomotive department of the London & North Western Railway before his fifteenth birthday. The office door had closed behind him for ever, and he had cast aside the white-collared respectability which, for him, would have spelt naught but drudgery.

How wise was his choice is revealed in the pages of his life story,* related largely in his own words to Messrs. M. C. D. Wilson and A. S. L. Robinson, in which he records his progress from boy cleaner to top link driver. That luck was with him there can be no doubt, for he was transferred to the fitters' shop after one day as a cleaner, and his appointment as fireman came early owing to older men being attracted by more lucrative employment. Nevertheless, it is clear that throughout his life he was an enthusiast completely in love with his job. In middle age, he became a well-known figure as the driver of the "Royal Scot" and the "Coronation Scot." The climax of his career came with the visit of the "Coronation Scot" to America, although an attack of pneumonia prevented him from acting as driver throughout the tour. Shortly after his return to England, he was called upon to drive, for the second time in his life, under the stress of wartime conditions.

It is obvious that nearly half a century of railway life had done nothing to damp his enthusiasm, for he pictured himself in retirement standing on the platform at Euston, surrounded by a group of his fellow enthusiasts, awaiting the departure of the "Royal Scot." Unfortunately, this was not to be, for his death occurred shortly before his reminiscences were published. Such men may grow old, but the ruling passion of youth remains strong to the end.

* "Queen Mary of the Iron Road." By Fred C. Bishop. Foreword by the Marquess of Donegall. London: Jarrolds, Publishers (London) Limited, 47, Princes Gate, S.W.7. 7½ in. by 5¼ in. 150 pp. Price 12s. 6d.

A Swiss View of the Transport Bill

From a Correspondent

AS a Swiss who has long had a considerable interest in transport, I have read the British Transport Bill, but I have found it difficult to understand how it will be possible to nationalise all internal transport in Great Britain, and to satisfy all the compensation claims set out in the financial memorandum, if the British Transport Commission may not borrow more than £1,065 millions for the purchase. This is the less understandable if one considers the capital which has been required for the nationalisation of the Swiss Federal Railways, although these are operating on only about half of the mileage of the Swiss Railways, and all the road transport concerns, and most of the inland waterways, are left to other corporations or private undertakings.

Experience in Switzerland shows that it is technically expedient, and also cheaper, to keep all secondary railways under private management, and maintain the shareholders' financial responsibility, subject to a very stringent technical and financial control by the relative Ministry. Experience in Sweden seems to have been similar.

The present tendency of government experts in Switzerland is adverse to further nationalisation of transport. In this country we have had experience of the cost of the irreparable mistake, both politically and financially, that was made some 50 years ago, when the railways were made dependent on Parliament instead of being vested in a public corporation controlled by the government. If this had been done, and a special share capital held as to the majority by the government, compensation and an interest in the financial results of the railways would have been given to the former shareholders of the principal companies; moreover, it would not have been necessary to raise taxes to cover the debt of the nationalised railway. From my reading, it would seem that a similar mistake is not avoided by the British Transport Bill.

Although the technical progress which has been effected under the nationalised Swiss railways has been indisputable, Switzerland's public finances are deeply and irremediably endangered by the gigantic and constantly increasing public debt of the Swiss Federal Railways. This has been brought about especially by the expensive and demagogic interference of politicians who constantly are asking for, and voting increases of, salaries and pensions, superfluous expenditure for luxurious railway stations, and so forth.

Among the principal causes of the unsatisfactory financial position are: that it is necessary to cope with the burden of a capital composed entirely of bonds bearing a fixed rate of interest; the absence of any precise and personal responsibility, especially of the managers and directors towards shareholders, and their complete dependence on an irresponsible and technically incompetent Parliament. Moreover, the political parties which formed the majority of the Swiss Federal Parliament at the time of nationalisation believed that the employees of the national railways would have to vote for them and would remain faithful members of their parties in the future; in fact, on the contrary, they have formed syndicates which tend to be the real masters of the management of the railways, and the leaders of these syndicates often have defied governmental programmes. In 1918, at the end of the first world war, these elements even supported by general strike an attempt to seize the Federal Government.

As to the clauses relating to the transport of goods and passengers by road, I am unable to judge exactly their extent because my Swiss experience does not give me any knowledge of the exact differences between the three classes of licences, "A," "B," and "C." In this country, also, we are endeavouring to limit excessive road competition, but here the situation is complicated to a certain extent because of the frequently intensive competition of the "postal autocars" for the railways' passenger traffic, especially during the tourist season. I feel that a similar situation might arise in British tourist centres.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Improving London Suburban Services

18, Wheatsheaf Close,
Woking. January 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—A lot seems to have been said lately in the Press and in Parliament about travelling conditions on the late G.E. suburban lines from Liverpool Street, with renewed demands for electrification. Well, of course, extensive electrification schemes have been in hand since before the war, but I am far from convinced that electrification in itself is a "cure-all."

What is required is the drastic modernisation of rolling stock and signalling, including provision of A.T.C. Electric trains are all very well when they are new, but some of the bone-shaking, overcrowded trains operated out of London Bridge are as much in need of replacement as much North London rolling stock.

In the evening rush hour, between 5.30 and 6.30 p.m., at Bethnal Green in 1938, I personally recorded 137 trains (including empty stock and light-engine movements), which on the six tracks available works out to an average headway between trains of almost 2½ min., which speaks very well for the way the service was operated, and bears out the G.E. argument that the service frequency could not be improved by electrification.

Here at Woking we have a mixed service of steam and electric trains, and seldom do passengers show any marked preference for the latter; neither are perfect timekeepers, but the steam trains more than hold their own, which is much to their credit in view of the longer and usually more difficult journey and older equipment used.

For my last paragraph, changing the subject if I may, it is interesting to note that the L.N.E.R., after all the mud that has been slung at it recently by the Government, should appear to be the Government's best customer so far for ex-W.D. locomotives.

Yours faithfully,
J. B. LATHAM

In Defence of Electrification

Cambridge. February 1

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The artic'e "Main-Line Railway Electrification," which appeared in your issue of January 24, contains some curious reasoning. Because the American railways have abandoned further electrification proposals in favour of diesel traction, therefore, argues your correspondent, the railways of Great Britain should follow a similar policy. And what prophetic vision was displayed by the railway companies in their refusal to take any action on the recommendations of the Weir Report!

This apologia for the inactivity of the railway managements during the inter-war years (with the honourable exception, of course, of the Southern Railway), however, simply will not do. Conditions in this country are entirely different from those prevailing in the United States. The following are among the more important reasons why diesel traction would not be quite such an attractive alternative to electrification in this country as your correspondent supposes:—

(1) *Availability of fuel.*—In spite of the present coal shortage, the bulk of our power requirements will continue to be supplied from coal fuel. Our economy never will permit us to rely exclusively on imported oil fuel. If atomic power is developed eventually on a commercial scale, the distribution of the power necessarily will have to be by means of electricity.

(2) *Size of diesel-electric locomotives.*—For main-line operation, express locomotives of at least 2,500 h.p. would be required. Owing to the small loading gauge in this country, such locomotives would be of excessive length. In this respect, gas turbine-electric locomotives would be both smaller and lighter. Note, however, that in either case the locomotive is an *electric* locomotive, carrying its own power station with it.

(3) *Traffic density and electrification.*—In the United States, the major railroad companies cover large route-mileages with relatively infrequent services. Consequently, the capital cost of electrification is a very serious obstacle. In the British Isles, on the other hand, where the distances involved are relatively small and the traffic density very high, conditions are much more suited to electrification. Even here, the capital cost will be a serious matter, but there would be a very great improvement in the services which could be provided on the more heavily occupied lines at present worked by steam traction. The contrast between the services out of Liverpool Street and those on the electrified sections of the Southern Railway provides conclusive evidence on this point.

Yours faithfully,
J. M. KAY

Main-Line Electrification

January 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The author of the article in your issue of January 24 on the above subject obviously regards the Weir Report as obsolete, and implies that Lord Weir's 1931 Committee was composed entirely of enthusiasts for electrification, anxious to advocate general railway electrification at all costs. Such is altogether untrue, as perusal of the report and standing of the members will show.

It is, however, clear that your contributor is "anti-electrification" and strong "pro-diesel," in which case perhaps he would answer the following questions:—

(1) How does he propose that this country shall pay for the vast amount of imported fuel that would be needed for wholesale diesel traction?

(2) Could he give reliable figures of capital, running and maintenance costs for diesel locomotives? It would be interesting to have authenticated information on this aspect of diesel-electric traction in the U.S.A. It is, I imagine, not unlikely these are greatly in excess of electric tractors in this country, and may be startlingly discouraging.

Until these questions can be answered fully and satisfactorily and with as much reliable authority as the Weir Report, I venture to suggest that the article in question and further consideration of the diesel-electric case are valueless.

Yours faithfully,
JUMBO

Wood End, Ardeley, Stevenage, Herts, January 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In his article on main-line railway electrification in your January 24 issue, your correspondent suggests that we must congratulate ourselves, and the railway companies, in that, having no main-line electrification scheme already under way, we are now in a position to take full advantage of recent developments in diesel-electric traction. He goes on to cite the rapid increase in conversion to diesel-electric traction in the United States.

To suggest that what the United States does about diesel-electric traction has any bearing on what can be done in this country surely omits to take into account two very important factors; economics and strategy.

If we are to run most of our railways on imported fuel we shall have either to increase our exports or reduce our other imports still further, neither of which appears possible for many years to come, and we shall have to maintain a very large tanker fleet engaged on long-haul one-way traffic. As to the strategic point of view; what happens in twenty years' time if with diesel-electric traction in full swing and our steam locomotive stock reduced to a few old crocks, we suddenly have to face an international crisis and even war? To avoid having the whole of the country's industrial output frozen in the factories from want of the right kind of fuel, we should have to spend hundreds of millions of pounds-worth of foreign currency in the next few years to build up enormous stocks.

Surely the only sound policy for this country to follow is the electrification of main lines with power supplied from generating stations, using oil-fuels where necessary, but readily convertible to coal burning in the event of an emergency.

Yours faithfully,
MAXWELL TAYLOR

NEW HOSTEL FOR LONDON TRANSPORT STAFF.—Four houses in Westbourne Terrace, London, once the Mansion Hotel, and from 1863 to 1913 the offices of the Metropolitan Railway, have been turned into a hostel for married employees of London Transport, mostly ex-Servicemen, whose wives and families have not yet been able to return. The hostel will take 110 men who, with nowhere to live in London, otherwise would be unable to resume their work with London Transport. This will relieve pressure on the existing hostel in the disused circulating area at Holborn Station, which holds 55 people and has been open for 15 months.

The Scrap Heap

A recent typing error described Sir William Wood as "President of the Executors." The shadow of coming events?

* * *

THE FROZEN WEST

Passengers in the 8.40 p.m. Penzance to Paddington express on January 29 were nine hours late arriving at Exeter, after gangs of railwaymen had struggled to clear a path through snow 2 ft. deep, and settling almost as fast as it was dug away. The train has sleeping cars, but no restaurant car, being due at Paddington at 7.40 a.m. Special instructions were sent to refreshment rooms at Exeter, Taunton, and Reading to have hot drinks ready for passengers when the train called there. To save time, the train was diverted *via* Westbury instead of taking the Bristol line as scheduled.

* * *

Below we reproduce a cartoon which first appeared in *The South Wales News* of November 27, 1922, when the amalgamation schemes under the Railways Act, 1921, were in progress, and which was also the subject of the front cover illustration of the January issue of the *G.W.R. Magazine*. When it published the cartoon, a leading article in *The South Wales News* stated that: "None of the companies which survives the amalgamation has come out of it with so much enhanced prestige as the Great Western. It is the only one to retain its old and familiar title." The reproduction of the cartoon is apposite at the present time in view of the Transport Bill now before Parliament, which has as its objective the nationalisation of inland transport, and it is of interest, also, in the light of the remarks made by Mr. G. R. Strauss, Parliamentary Secretary to the Ministry of Transport, at the annual dinner of the Permanent Way Institution, reported in our January 24 issue. Mr. Strauss said that the setting up of the new administrative machinery should take place with the minimum dislocation, and that it would be folly to try to affect any fundamental and administrative changes on the taking-over day. It would be far better to proceed step by step.

THE GREAT WESTERN: "Hooray! Never even blew me cap off!"

Political Slogans

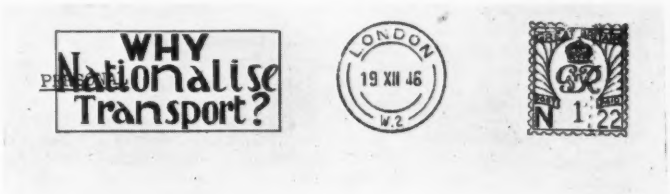
The Central Office of the Conservative Party recently secured an immense volume of publicity by the adoption of a simple slogan on its post office franking machine —"A HAPPY NEW YEAR AND A NEW GOVERNMENT SOON." Not that the slogan itself was seen by many people, as only one day's posting of envelopes bearing this wording went out before the Postmaster-General stepped in and stopped it. These slogans, it was said, were embarrassing, as many people regarded them as impressions made by the Post Office.

But if this slogan had any merit at all —and one must assume that the Conservative Party organisers themselves thought it had, or they would never have adopted it—the resultant publicity must have been of untold value to them. Some of the opposition newspapers even professed to see in the Postmaster-General's action an infringement of personal liberty that could only be expected from a Socialist Government—one of those steps, presumably, on the road to the Gestapo State about which Winston Churchill had warned the country in one of his General Election broadcasts. But even papers hostile to the Tories referred to it. They had to—its discontinuance obviously had "news value"—even if their observations were couched in rather acid terms.

One outcome of the wide publicity accorded to this episode was a keen demand among philatelists for original specimens of the *rara avis* that had caused it, and up to £2 apiece was being paid for them.

About the same time, the G.W.R. had adopted a similar tactic, and the Paddington franking machine must have turned out some thousands of envelopes bearing the inquiry "WHY NATIONALISE TRANSPORT?" Indeed, this slogan was used for many days after the Conservative Party had been called to order, and it was not until well into the New Year that it suddenly ceased to appear.

The Road Haulage Association recently announced that its Liverpool office had been asked by the Post Office to discontinue franking its letters with "TRANSPORT NATIONALISED MUST MEAN INDUSTRY PARALYSED," a slogan that had been used in this fashion for many months. Similarly, one of the Association's members at Haddington had been requested to cease using a postal-frank bearing the words "ROAD TRANSPORT. BE SURE AND SIGN THE PETITION AGAINST NATIONALISATION." Can it be that Paddington, also, has been called to book?



But, although the G.W.R. franking machine no longer gives cause for embarrassment in high places, the slogan is still in use, as "WHY NATIONALISE TRANSPORT?" is now being affixed to envelopes by means of "stickers."

Will the time come, we wonder, when railway collectors and philatelists will be prepared to pay high prices for specimens of the slogan-franked envelopes that once emanated from Paddington? We are preserving ours, just in case. (Part of the envelope is reproduced above.)

Waterloo, not to be outdone, has also adopted the "sticker" form of propaganda. "STATE TRANSPORT MEANS TAKE IT OR LEAVE IT" is its slogan.

Will the other main-line companies follow suit? And, if so, what form of words will they use? "DON'T BE LEFT—OPPOSE STATE TRANSPORT" is a possibility. Or, perhaps more to the point —"WHY MOVE IN GOVERNMENT CIRCLES? OPPOSE THE TRANSPORT BILL." Another alternative which has been suggested to us reinforces the plea for a public inquiry, thus—"HASTY LEGISLATION IS PUTTING BRAKES ON TRANSPORT."

* * *

100 YEARS AGO

From THE RAILWAY TIMES, *February 6*, 1847

WANTED immediately, a Gentleman of experience, to undertake the office of General Superintendent and Manager of the Edinburgh and Glasgow Railway.

Applications, with Testimonials, to be forwarded to Peter Blackburn, Esq., Chairman of the Board of Directors, Railway Office, Glasgow, on or before the 4th March.

By order of the Directors,

(Signed) H. G. WRIGHT, Secretary.

Glasgow, Feb. 2, 1847.

JUST PUBLISHED,

THE RAILWAY DIRECTORY for 1847, containing the NAMES of the CHAIRMEN, DEPUTY-CHAIRMEN, DIRECTORS, and OFFICERS of all the RAILWAYS in GREAT BRITAIN and IRELAND for which Acts of Parliament have been obtained. Compiled from Authentic Sources. By HENRY TUCK, Author of the "Railway Shareholders' Manual," and "Railway Map." Price Two Shillings.

London: published by Effingham Wilson, 11, Royal Exchange; RAILWAY TIMES Office, 122, Fleet-street; Wareing Webb, Liverpool; Thompsons, Manchester; Cumming and Ferguson, Dublin; and sold by all Booksellers.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

CANADA

Alaska Rail Project Suspended

An official of the Dominion Government has stated that construction of a railway or a second Alaska highway, to link the United States and Alaska through British Columbia, is not considered feasible at the present time. This announcement was made in reply to a suggestion at Vancouver by a U.S. Senator, Warren G. Magnusson, that the Canadian Government was holding up development of the Pacific North-West. The Canadian Government has had in mind the possibility of building a railway or highway to Alaska, but feels that at the moment it is not practicable, particularly in view of the expense the Canadian Government has assumed in the upkeep of the Canadian section of the existing Alaska highway.

Railway Abandonments

Since 1932, abandonments of railway lines in Canada have ranged annually from 11 to 399 miles, excepting in 1943, when less than 1 mile was abandoned, and in 1945, when no miles were abandoned. There were 28 miles abandoned in 1946, making an aggregate for the 15-year period of 1,205 miles.

UNITED STATES

Large Union Pacific Diesel Orders

Complete dieselisation of the Union Pacific Railroad south of Salt Lake City, Utah, by autumn this year was forecast recently in a speech by the President, Mr. G. F. Ashby, in announcing that the company had just placed the largest diesel order in railway history. The order was for 64 diesel-electric passenger, freight, and shunting locomotives, at a cost of $22,000,000. The new equipment consists of 7 passenger locomotives, 28 freight locomotives, and 29 shunters. With delivery of the equipment this year, the Union Pacific will have 178 single diesel units for freight and passenger traffic, consisting of 66 units for passenger and 112 for freight service, together with a total of 141 diesel shunters.

The seven passenger locomotives consist of two three-unit locomotives of 6,000 h.p., to be delivered by the American Locomotive Company in May; and five three-unit locomotives of 4,500 h.p. from the Electro-Motive Division of the General Motors Corporation, for delivery in June.

The new goods motive power will consist of 10 4-unit, 6,000-h.p. American Locomotive Company diesels, and 18 4-unit, 6,000-h.p. diesels from General Motors, to be delivered in April and September respectively. Early delivery is expected of 25 General Motors diesel shunters and 14 from the Fairbanks Morse Company.

C. & N.W. Streamline Projects

Provided equipment now on order is received in time, the Chicago & North Western proposes to place several new streamline trains in service during 1947. These include a new train between Chicago and Omaha; a fast daytime service between Chicago and Southern Minnesota; and an extension of the "400" services to operate all the year round between Chicago, Ashland, and Watersmeet, giving a daytime service for the Wisconsin North Woods resorts area which will improve on existing trains. A new streamline train is projected, also, to run to and from Sioux City in connection with the proposed new Chicago—Omaha service. At the same time that these announcements were made, it was stated that during 1947 the company will begin to operate the existing "Nightingale" and "North American" trains between Minneapolis, St. Paul, and Omaha on faster schedules, with 4,000-h.p. diesel-electric locomotives.

ARGENTINA

Proposed New Link with Chile

The Argentine Congress recently approved a proposal for the extension of the State Railway system from Tinogasta, in the Province of Catamarca, to the frontier of Chile, either at the San Francisco or the Peña Negra Pass. The scheme appears to be a revival of a project to connect the port of Caldera (Chile) with Tucuman *via* the San Francisco Pass. This railway was built as far as Copiapo (Chile), but the survey was continued through. The project now approved by the Argentine Congress leaves the engineers free to follow either the San Francisco Pass or the Peña Negra Pass routes. The latter would be the more difficult, as although at first it would have the advantage of the valley of the River Troya, it would have to cross the watersheds of this river and that of the Vinchina, and probably would follow the valley to the vicinity of Lake Brava, with a very dubious location thence to the Peña Negra Pass (4,400 m.).

On the other hand, by following the River Colorado north to Fiambala, the ancient highway through the San Francisco Pass to Copiapo would be gained, this road having been the basis of the original survey for the greater part of its route. A tunnel under the Peña Negra Pass, however, would give access to the Copiapo River valley, and possibly avoid the greater altitude (4,726 m.) of the San Francisco Pass. The approximate distances between Tinogasta and Copiapo by the two routes are: *via* San Francisco, 240 km.; and *via* Peña Negra, 270 km.

Once connection is made with the metre-gauge Chilean Longitudinal Railway, which runs from La Calera, near Valparaiso on the west coast of South America, to Pueblo Hundido, in the far north, through communication will be opened between the Central Northern lines of Argentina and this great stretch of the Republic of Chile, either *via* Cordoba, La Rioja, and Cebollar, or *via* Recreo, Chumbicha, and Cebollar. This would put Buenos Aires, Rosario, and Santa Fé in direct communication with Chile, but traffic from the North of Argentina would have to use the circuitous route from Tucuman down to Recreo to join this line, or follow the Socompa route, nearly 300 km. farther north.

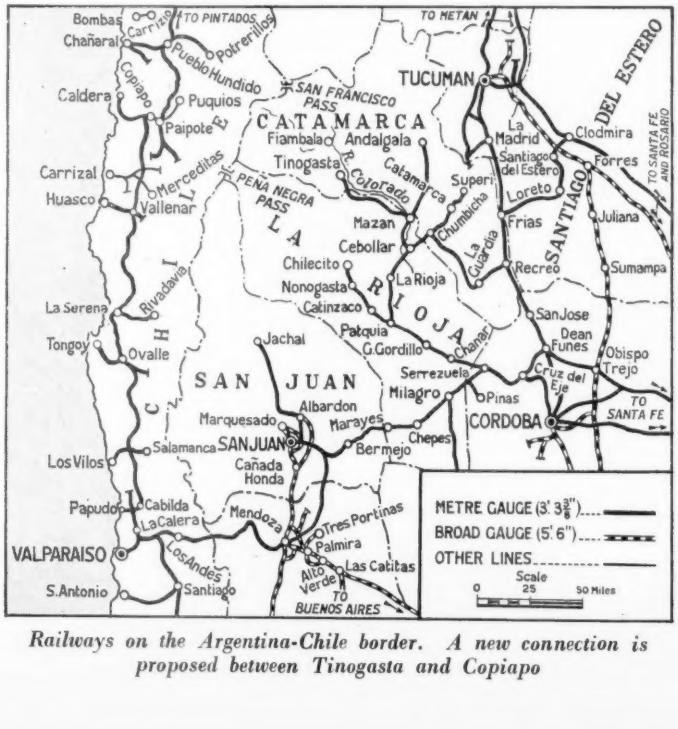
NEW ZEALAND

Extended Three-Aspect Signalling

During 1946, automatic signalling with approach-lighted three-aspect searchlight signals was extended from Reefton to Westport, on the west coast of South Island, and now covers the whole of the 79-mile section from Ngahera to Westport. Between Reefton and Westport, a distance of 46¼ miles, there are five crossing loops, of which four are unattended and have to be worked by the train crews. The line from Westport and Reefton divides at Stillwater, just south of Ngahera, to serve Greymouth in one direction and Christchurch in the other.

Further Conversions to Oil Firing

The Minister of Railways, Mr. R. Semple, has announced that, after the experimental conversion to oil burning of



Railways on the Argentina-Chile border. A new connection is proposed between Tinogasta and Copiapo

two "K" class 4-8-4 locomotives, the Government has decided that a further twenty "Ka" class 4-8-4 engines will be converted as soon as possible, permitting the Railways Department to eliminate the restricted timetables which have been necessitated by the shortage of bituminous coal in the Dominion. Locomotives of the "K," "Ka," and modified "Ka" classes were illustrated in *The Railway Gazette* of October 4, 1946. They are heavy-duty engines, developing a tractive effort of 30,815 lb.

INDIA

Railway Board Meeting with Union

The 25th half-yearly meeting between the Railway Board and the All-India Railwaymen's Federation will be held in New Delhi on February 6. Among the subjects discussed will be: Extension of service conditions on Indian Government Railways to other Indian railways; compensation to railwaymen for expenses incurred in evacuating their families from vulnerable areas during the war period; payment with back effect of enhanced rates of military ration allowance and railway dearness allowance to militarised staff; acting allowances to employees officiating in higher posts; and conditions governing examination for promotion in respect of accounts staff.

BURMA

Pay Train Held Up by Bandits

The Burma police and military have been combing the Insein District, north of Rangoon, for a gang of armed bandits who held up a special train near Taikkyi Station, on the Rangoon—Prome line, and carried off railway employees' wages totalling £11,000. The robbery—the worst in a long series of violent crimes along the railway—occurred on New Year's morning. After a gun battle between the gang and the police guards accompanying the train, during which one railway official was killed and three others seriously wounded, the bandits ransacked the train, taking away the cash, and three railway officials as hostages. The railway guard and another railway official, two of the three men taken as hostages, have since been found dead on a hill top near the scene of the incident.

As a result of the number of attacks on trains in recent months, special precautions are being taken for the safety of railway traffic on the Northern lines. Several months ago an amnesty was offered to all armed gangs if they surrendered, together with the arms and ammunition in their possession. The response to this offer was meagre, so that the Government on January 4 began publication of the "Dacoity and Robbery Amnesty Act, 1946," in the advertisement columns of almost all the newspapers in Rangoon.

Locomotives and Rolling Stock

By the end of December, 1946, the railways had 176 locomotives in working order, an increase of six on the preceding month. A further 51 goods wagons were repaired and placed in service. So far, vacuum brake apparatus has been restored on 1,100 wagons, or approximately one quarter of the total stock.

NORTHERN IRELAND

G.N.R. Christmas Display

A seasonable atmosphere was created by the Great Northern Railway Company (Ireland) at the Great Victoria Street, Belfast, terminus during the Christmas holiday period. The circulating area was decorated with holly and mistletoe, and several notice boards bore appropriate greetings to the travellers. As passengers passed through the barriers to the trains, they heard the voice of the lady announcer over the station sound diffusion system, wishing all a happy Christmas.

A model church, measuring 10 ft. by 6 ft. at the base, and standing 12 ft. from ground level to the top of the spire, was erected in a prominent position in the station concourse, and gramophone records of peals of bells, organ music, and Christmas carols were relayed from it. The building, made of plywood, was painted to resemble masonry, and was externally complete to the smallest detail, even to a small electric clock in the belfry. A subdued light burnt within the church, throwing into relief the design of the miniature stained-glass windows; and the grounds were neatly laid out as an ornamental lawn, with miniature trees. Gravel, from the company's quarries at Goraghwood, was used to make the approach to the church door and the surrounding paths.

The model was built entirely by men employed in the Mechanical Engineer's Department. Two loudspeakers in the base were connected to an electric turntable in an adjacent office, where records were played throughout the Christmas period.

SWITZERLAND

Curtailment of Train Services

An emergency timetable, with severely curtailed train services, was introduced by the Swiss Federal Railways on February 3, in consequence of the electric power shortage occasioned by the abnormally dry winter weather. In all, 277 electric passenger trains have been withdrawn, including 6 fast, and 14 semi-fast services. A number of goods trains, also, is discontinued by these suspensions. The Swiss Federal Railways have reduced their daily electric train-mileage by 5 per cent. from the previous daily total of 67,670 train-miles. The restricted services have been made necessary by the fact that previous economy measures, recorded in *The Railway Gazette* of January 31, proved insufficient to effect the power saving required. It is estimated that the reduced services will permit a saving of 12 million kWh. in the first half of February. The position is aggravated by the fact that the promised supply of electric power from Austrian power stations could not be maintained on account of similar difficulties in that country.

Publications Received

The World's Smallest Public Railway. By O. J. Morris. London: Ian Allan Limited, 282, Vauxhall Bridge Road, S.W.1. 7¼ in. × 4¾ in. 64 pp. Price 2s. 6d. Paper covers.—The restoration to public service after the war, coupled with the lively publicity activities of Mr. Ian Allan, have combined to direct a considerable amount of attention to the Romney, Hythe & Dymchurch Railway, and many of its present and potential admirers will welcome this brightly-written descriptive book, which is generously illustrated. There is a great deal of background material of this interesting narrow-gauge enterprise, and useful chapters on traffic working, rolling stock, locomotives, and war service. Not the least of its war efforts was concerned with the laying of Pluto. Appendices give a list of locomotives, past and present; locomotive dimensions; stations, halts, and mileages; and a list of personnel.

Plan General de Electrificación de los Ferrocarriles Españoles (General Plan for the Electrification of the Spanish Railways): 11 in. × 8 in., with 3 maps, tables, and diagram. 64 pp. Issued by the Spanish Ministry of Public Works, Madrid, 1946.—In accordance with decisions taken earlier in 1946, the Spanish Ministry of Public Works has issued this comprehensive general statement of requirements, covering the methods and types of equipment to be used on the 12-year electrification plan, which comprises 2,800 miles of route. Probably the most interesting detail that emerges is that the 3,000 volt d.c. system is to be taken as standard. At present this is in use only on the Pajares Pass section; the remaining electrified sections—except for some isolated 3-phase equipment—are on the 1,500-volt system. It is proposed, however, to convert two of these, but to retain the lower voltage in the area north of Burgos and Castejón, to link with the existing electrically-worked Alsasua-Irún route. This will enable the present rolling stock operating out of Madrid and Barcelona to be transferred to that area. The present publication—a preliminary basic specification covering leading details and touching on everything from power supply to rolling stock, signalling, and telecommunications—gives a general picture of what is one of the most important electrification schemes ever to be undertaken.

Bakelite Progress.—The varied applications of plastic materials in modern commercial design are exemplified in a recent issue of *Bakelite Progress*, which we have received from Bakelite Limited, 18, Grosvenor Gardens, London, S.W.1. Two pages of illustrations show the evolution from the designer's drawing board to the finished product of the new "Trianon" buffet car for the Southern Railway "Golden Arrow" express, which was converted from a standard Pullman car by means of interior panelling and fittings carried out in plastic materials. This vehicle was described in our May 17, 1946, issue. The publication shows many examples of plastic materials used in the construction of everyday objects.

Heavy Plain Grinding Machines.—The Churchill Machine Tool Co. Ltd., Broadheath, near Manchester, has issued an illustrated booklet dealing with the principal features of a range of heavy plain grinding machines. In these machines the grinding wheel spindle runs in the Churchill patent Hydrauto bearing, which is self-adjusting and automatically maintains in all conditions the minimum practicable thickness of oil film between spindle and bearing. All sliding surfaces in the machines provide a large bearing area so that even with the maximum size of work, the load per unit area amounts to only a few pounds per square inch. Individual motor drives are provided for the wheelhead, workhead, traverse, and coolant supply. Swarf is separated from the coolant in a special tank that will hold about 2 cwt. before cleaning out.

The Development of Gas Turbine Power Plants for Traction Purposes in Germany*

An attempt to enable an increased power-for-weight ratio to be achieved while using fuels of low quality

DURING the last year of the recent war, the possibility was seriously considered in Germany of employing gas turbines as power plants in various types of vehicles. The reasons were mainly the hope of increasing the power-to-weight and power-to-volume ratios with a simpler and cheaper construction.

Thus, it was intended to obtain some power units for traction purposes of greater horsepower than those available at the time, but to use them for the same types of vehicles as those in which petrol and oil engines had been fitted in accordance with normal practice.

The other advantage expected was that a gas turbine plant would use a fuel of low quality, although it was realised in the initial stages that fuel consumption would be considerably higher than in the case of a compression-ignition or petrol engine.

It was hoped, however, that this could be reduced to a comparable level during later stages by the introduction of a suitable heat exchanger. The project for the use of gas turbines was also explored in the hope that a power plant might be developed with a more suitable torque characteristic for traction than that given by a compression-ignition or petrol engine.

Simplification in Construction and Maintenance

The simplification in both construction and maintenance when employing a gas turbine power plant instead of a conventional compression-ignition or petrol engine is very considerable. No radiators or cooling system are required, and lubrication presents a much simpler problem, as no reciprocating parts are involved.

A gas turbine of German or Swiss design would be an awkward shape for installation in any vehicle other than a railway locomotive, in which length is not so important, though there is no reason why the shape of a gas turbine power plant should not be made to conform to a considerable extent to any particular requirement. It is most convenient, in the German view, for the whole plant to be in line, but it is not essential.

Air Cleaning

Air cleaning in a gas turbine installation will present a different problem from that in a reciprocating engine. The turbine may be expected to accept considerably larger dust particles in greater concentration than can be tolerated by other types of power plant. The volumes of air required by a gas turbine power plant are, however, much greater.

For example, a 1,000 h.p. air-cooled internal-combustion engine may require about 1 kg. of air per second for combustion, and about 5 kg. per sec. for cooling, *i.e.*, a total requirement of 6 kg. of air per sec., of which only 1 kg. per sec. requires to be cleaned. This 1 kg. per sec. must, however, be cleaned to a fairly fine limit if a reasonable life is to be expected for a piston engine operating for a considerable portion of its time in dusty conditions.

A gas turbine of similar power would require approximately 10 kg. per sec. for combustion working under normal conditions of temperature and pressure. All this air may be required to be cleaned to some degree, although how far has not been established with any degree of certainty in Germany. On the Brown-Boveri locomotive described by Dr. Adolf Meyer,* no air cleaner was fitted, but the atmosphere in Switzerland is extremely free from dust.

This locomotive has proved the suitability of a gas turbine for traction purposes in this particular application. Also, the fact that gas turbine units have been accepted as a means of propulsion for military aircraft in service, not only in Germany but in many other countries, shows that a considerable degree of reliability and many advantages may be expected from them. The dimensions of a German design of gas turbine without any heat exchanger as at present envisaged would not be much smaller than that of a similar internal-combustion engine of equal capacity, but as it requires no cooling system, it permits considerable economy in space.

A gas turbine designed according to British practice would compare favourably as regards volume with a standard reciprocating engine. It is claimed that the cost of materials and labour required to build a gas turbine power installation should work out at about one-third of that for a similar installation incorporating a piston engine, according to present-day production methods. Maintenance should be considerably reduced, and a low-grade fuel can be used.

Comparison of Fuel Consumptions

The smallest specific fuel consumption which might be expected from a gas turbine power plant of German design for a vehicle would be between 1.0 and 1.1 lb. per b.h.p.-hr. This figure is at least double what might be expected from a compression-ignition or petrol engine, although a gas turbine of British design would compare more favourably. By the introduction of a suitable heat exchanger to utilise the waste heat of the exhaust gases, a considerable reduction in fuel consumption should be possible. Meanwhile, experiments have already been carried out in Germany on jet propulsion units using such low-grade fuels as ordinary coal and lignite tar oils, crude oil, and unrefined mineral oil.

The useful output of all internal-combustion engines is fundamentally derived from the difference between the work of expansion and the work of compression. This applies equally to gas turbines, although compression takes place in a separate compressor. The compression in this case, however, absorbs a relatively large part of the work of expansion (between 60-75 per cent.), due to the relatively low temperatures at present employed in gas turbines.

On the other hand, over and above this limitation, which shows that only 25-40 per cent. of the actual work done can be externally used, without a heat exchanger a great amount of waste heat is discarded with the exhaust gases. Without a heat exchanger, therefore, a thermal efficiency of about 16 per cent. only, may be expected in German practice, and a slightly better figure with British designs.

For the transmission of the useful work obtained from a gas turbine power plant to the driving wheels of a vehicle, any of the normally accepted transmission systems may be employed. An electric drive, as in the Brown-Boveri locomotive, may have many advantages, but a hydraulic or mechanical system may also be used. The use of a purely mechanical system usually is excluded when only one turbine is employed, because of the unsuitable torque characteristic. Two turbines may, however, be used to give a torque characteristic which shows considerable advantages over that obtained from a diesel or petrol engine. Apart from a 1,200-h.p. unit, consideration had been given by some German engineers to the possibility of developing a much smaller unit, of 320 h.p., intended for use in normal types of commercial wheeled vehicle.

Problem of Control

One of the greatest difficulties in using a gas turbine power plant in a vehicle is the problem of control. Where the same turbine is used both for driving the compressor and for producing useful work, temperature control in the combustion chamber, *i.e.*, fuel control, is the only logical means. Some device is needed, however, to prevent stalling, and for this, the Germans intended to employ an electrically operated gearbox to change the working range automatically when the speed of the power plant fell to some predetermined value. The automatic gear change would be located between the main gearbox and the transmission to the wheels.

Where one turbine is used to drive the compressor and a second turbine produces the useful work, the simplest means of control would be to control the output of the work turbine by the temperature in its own combustion chamber, *i.e.*, by fuel control of the work turbine only. This method, however, is likely to be prohibitively costly in fuel, as the primary turbine would be working at full load on maximum fuel consumption all the time. Some form of dual control is, therefore, necessary to enable the work turbine to operate on its most suitable torque characteristic, having regard to overall fuel consumption.

This condition could be obtained by regulating the fuel supply to the work turbine only for minor fluctuations of speed and load, and following this by regulation of the primary turbine to obtain optimum fuel consumption. For ease of operation, some form of automatic linkage should be provided between the two fuel supplies.

Control may be effected by regulating the air delivered from the compresser to the work turbine by means of a valve. This is obviously a wasteful method, as it will necessitate the spilling of a proportion of the air normally delivered to the work turbine if the primary turbine is maintained at a constant speed with a constant output of air from the compressor. It was, however, considered that the introduction of some such control might be necessary when changing gear, in order to avoid any excessive acceleration of the work turbine under a temporary condition of no-load.

The transmission required for any scheme incorporating a separate-work turbine would be greatly simplified in comparison with that required for a scheme in which one turbine both drives the compressor and does useful work. Owing to

* Paper by Lt.-Colonel R. H. Bright, R.T.R., issued by the Institution of Mechanical Engineers for discussion in writing. Abridged

* Proc. I.Mech.E., 1943, 150, p. 1

the excellent torque characteristic which may be obtained from the use of a separate-work turbine, it is probable that, for the operation of any vehicle, two gears should be sufficient in a comparatively simple type of gearbox, although it must be remembered that the transmission mechanism on the power plant side of the gearbox will be expected to transmit a much greater torque than in the case where a normal type of internal-combustion engine is employed. It will be necessary to employ a 10/1 reduction immediately after the work turbine in any of the schemes considered, in order to reduce the speeds in the transmission to those of normal practice.

For starting, two electric motors are included, with a total output of 15 to 20 h.p. To start the installation, it is necessary to raise the speed to 20 to 30 per cent. of normal running speed when initial combustion in the combustion chamber is effected by a single sparking plug operated by hand magneto or other device. Where a separate-work turbine is employed, only the primary turbine need be started initially, the work turbine being subsequently started under full load if desired; which demonstrates one particularly favourable feature of the power plant.

Design of Main Components

In the German proposals, an axial flow nine-stage compressor was to be employed with a top speed approaching the velocity of sound. It was to have been built entirely of light alloy, with the exception of bolts and bearings. It was considered that such material would be suitable for the blades, and that the rotor should be made of the same material, to prevent loosening of the blades at any particular temperature due to unequal thermal expansion. Corresponding to the nine rows of blades, the rotor was to be built up of nine individual duralumin discs secured by eight steel longitudinal bolts on a diameter approximately half that of the discs.

The casing was to be cast in light alloy in two halves bolted together in the horizontal plane. Both ends of the casing were flanged to fit on to the separate compressor inlet casing at the one end and the outlet casing at the other. This has the advantage of not only being simple, but of allowing inspection of the compressor blades simply by removing the top half of the casing. The fixed and rotary blades are fixed in peripheral grooves, as in steam turbine practice. The profile and root of the blade are integral, and in between the two roots of successive blades there is a distance piece.

The rotor is supported by two roller bearings, the axial thrust being balanced against the thrust of the turbine as far as possible. Any unbalanced thrust is, however, taken up by one radial roller bearing. To avoid any thrust being transmitted from the hub of the compressor to the compressor casing, the last disc is relieved, and a ring with seals is bolted to it by a flange to form an air seal with the end of the rotor casing. The only contact with the end of the casing is, therefore, made by these seals. All bearings are also fitted with them.

At the outlet of the compressor, the outer diameter of the blading of the last stage is fixed by the dimensions of the end of the compressor which is to fit directly on the annular combustion chamber.

The inner diameter of the blades, which is the diameter of the rotor, will then depend upon the Mach number to be employed, which is equivalent to the amount of air to be handled, at the inlet end. Blading of 50 per cent. constant reaction is used, so the fixed and rotary blades are symmetrical. The resultant air flow is not axial, but helical throughout the compressor at an angle of about 45 deg. For this reason a special row of fixed blades is arranged at the intake to initiate the flow, and at the outlet there are two rows of fixed blades to straighten it. The blade angles inside the compressor are not constant, but the blades are progressively twisted owing to variation of the peripheral velocity between the first and last stages.

Unlike many jet propulsion units, especially those employed in British practice, one combustion chamber only is used. This is circular and surrounds the turbine. Inside, there is a symmetrical arrangement of the fourteen cones which contain the burners, and through which the primary air is introduced. Introduction of primary air only is individual to each burner, secondary and tertiary air being common to the whole chamber.

The secondary air is introduced from behind the cones and the tertiary air through the mixing fingers placed about midway down the annular chamber. This arrangement will, therefore, have the advantage that a homogeneous mixture of hot gases of equal temperature should reach the turbine blades all the way round the turbine rotor.

The employment of one combustion chamber of this design is claimed to avoid any variations which might occur where a number of separate chambers are employed.

For the primary turbine, the main data are as follow:—

Pressure before the turbine = 4·5 atmos.
Temperatures after the turbine = 500° C. (932° F.) approximately
Speed of rotation = 14,000 r.p.m.

The blades were to be hollow and air-cooled both in rotor and stator. The temperature of the turbine was limited to 800° C. in the German design on account of wartime restrictions in the use of alloying elements. It is the opinion of German engineers that, given the use of the best heat-resisting steels available in this country, a temperature of 1,000° C. could be tolerated in the turbine, with a corresponding increase in efficiency. Owing to the war, there was little time for detailed development of the blades in the turbine; hence, a design similar to that which had been proved in B.M.W. exhaust-driven superchargers was employed.

Three-Stage Turbines

This design had, however, previously been employed only in single-stage turbines, and with an amount of cooling air which is too great for use in this type of turbine. The turbine was to be in three stages, employing reaction blading, the stress on the blades not exceeding 10 to 15 kg. per sq. mm. (6.35 to 9.5 tons per sq. in.) at a temperature of 500° C. It was found, however, that the temperature could not be kept down to this limit; nor is it desirable in the interest of efficiency.

The cooling air for the blades was to be taken from the outlet of the compressor, as bleeding off from individual stages, which would increase efficiency by economising the work done by the compressor, was not considered practicable. The cooling air, after leaving the compressor, circulates round the combustion chamber before entering the turbine through the fixed and rotary blades.

It is plain that these projects were in the detailed investigation stage only. Much thermodynamic calculation had been done, but even the detailed design of many of the components had not as yet been started. On the other hand, from the progress which had been made, it would appear that such a power plant has great possibilities for the future.

The normal types of internal-combustion engine are expensive to build, intricate in construction, require considerable maintenance, a high-grade fuel, and have a relatively short life. With adequate development, there appears every reason to suppose that a gas turbine power plant should offer many advantages in these respects.

LEOPOLDINA SCHEME OF ARRANGEMENT.—A new scheme of arrangement has been evolved for the postponement of interest payments on the debentures of the Leopoldina Railway Co. Ltd. In the main, the scheme amounts to an extension for a further five years of the moratorium set up in December, 1941, and which expired on December 31 last. Interest payments on the 4 per cent. first debentures, and 6½ per cent. terminable debentures, due on January 1 and July 1 this year, will be postponed until January 1, 1948, and for such further periods of up to four years as may be sanctioned by the debenture committee. Provision is made for the application of any available funds during the moratorium period to the service of the securities in their proper order of priority. Meetings of the debenture holders to consider the scheme will be held in London on February 12.

PRESENTATION TO L.M.S.R. LOCOMOTIVE, "ULSTER."—A pair of plaques bearing the coat of arms of Ulster was presented formally to the L.M.S.R. "Jubilee" class locomotive No. 5739, *Ulster*, by Lady Brooke, wife of the Prime Minister of Northern Ireland, at a ceremony at Euston Station on January 31. The plaques are a gift from the Ulster branch of the Overseas League. In inviting Lady Brooke to perform the ceremony, Sir Robert Burrows, Chairman of the L.M.S.R., said that the locomotive had been completed just before the war, and had to be sent into traffic without a naming ceremony. It had run 733,081 miles already, or something like 30 times round the world. The company had close ties with Northern Ireland, as it operated a railway there, and carried the greater proportion of goods and passenger traffic to and from that country; moreover, the L.M.S.R. had taken its President, Sir William Wood, from Northern Ireland. If they had a particularly bright member of their staff they sent him to Northern Ireland, and should he make good in Belfast, he was qualified for the highest positions on the L.M.S.R., said Sir Robert Burrows, adding that he was referring to Mr. F. A. Pope. Lady Brooke then unveiled one of the plaques, which are mounted above the nameplates. The locomotive is finished in the new L.M.S.R. livery of black, with maroon and straw-colour lining. Lady Brooke was accompanied by Sir Basil Brooke, and among the L.M.S.R. directors and officers who attended the function were: Lord Aldenham, Lord Woolton, Sir Murray Stephen, Messrs. Evans Bevan, and Francis M. Glyn (Directors); Messrs. T. W. Royle, R. A. Riddles (Vice-Presidents); and Mr. J. W. Hutton (Manager, Northern Counties Committee, Belfast).

Passenger Comfort in Pere Marquette Railway Streamliners

These trains have lateral as well as vertical shock absorbers, central kitchens, dining car tables carried on brackets to give more leg room, and portable radio equipment for the train crews

FROM the inception of the Pere Marquette diesel streamline trains on August 10, 1946, the service attracted immediate attention in all parts of the United States as a result of novel features in its equipment and operation. Before these trains were introduced, the Pere Marquette Railway, which serves the area of Michigan enclosed on the west by Lake Michigan and on the east by Lakes Huron and Erie, had no high-speed passenger service, and was occupied mainly with freight, particularly in connection with its train ferries from Ludington across Lake Michigan to the Wisconsin ports of Milwaukee, Manitowoc, and Kewaunee.

Pere Marquette System

The Pere Marquette system consists of a main line across the base of the Michigan promontory from Detroit to Grand Rapids and Chicago; a line to the north of it from Chatham and Port Huron, at the southern tip of Lake Huron, to Saginaw and Ludington on Lake Michigan; a line northwards from Grand Rapids to the northern end of the Michigan promontory at Bay View, intersecting the Saginaw-Ludington line at Baldwin; and various connecting branches.

Hitherto, the only diesel streamline train running on Pere Marquette metals has been the Washington-Detroit "Ambassador" of the Baltimore & Ohio, for 64 miles between Toledo and Detroit, but this has recently been diverted to the New York Central tracks.

The new streamline trains, of which there are two, have been put into service over the 152-mile section of the Detroit-Chicago line between Detroit and Grand Rapids, and are among the first entirely new diesel streamliners to be installed in the U.S.A. since the war. Each train makes three trips daily, two in one direction and one in the other.

Departures from Detroit are at 8.15 a.m., 12.15, and 5.15 p.m., and from Grand Rapids at 7.50 a.m., 1.0, and 5.25 p.m. The morning and evening streamliners take 2 hr. 40 min. for the run, and the midday trains, with additional intermediate stops, 3 hr. For the 87 miles between Detroit and Lansing, the allowance for the morning and evening expresses is 91 min., and for the 65 miles between there and Grand Rapids, 69 min.; the route is single track.

Each train consists of 2,000-b.h.p. single-unit diesel-electric locomotive, baggage car, mail car, four reclining-chair coaches, and a dining car. The locomotives are of the standard Electro-Motive passenger type, each with two 1,000-b.h.p. 12-cylinder diesel engines of the 2-cycle V-type.

Each locomotive is 71 ft. long, 14 ft. 10 in. high overall, and 9 ft. 6 in. wide, and weighs 141 tons in running trim, with its full complement of 1,200 gal. of fuel oil and 1,200 gal. of water for the train-heating boiler. These supplies permit operation over two double trips between Detroit and Grand Rapids (608 miles) without refuelling or re-watering.

The locomotives are geared for a maximum speed of 117 m.p.h., but curves and service slacks on the route concerned do not permit of the attainment of such high speeds; over such alignments, however, diesel-electric power is of particular advantage because the low centre of gravity, flexible wheelbase, and method of suspension permit considerably higher speeds over curves than is possible with ordinary steam locomotives, and acceleration from slacks is more rapid than with steam.

Each locomotive cab is sound proofed, permitting the enginemen to exchange signal observations in normal tones; also, it is equipped with two-way radio, enabling the locomotive crew to relay operating messages to the train crew at the rear end, or *vice versa*, when the train is in motion. The cab has adjustable no-draught roll-down side windows for summer use, and is heated in winter; it is fitted with automatic windscreen wipers, defrosters, sun visors, and two pneumatic horns, one for country operation and one for use within city limits.

The coaches, built by Pullman-Standard, are of welded Cor-Ten steel-body construction, covered with stainless-steel sheets up to window level. The bogies are of the Commonwealth all-coil spring type, each with a wheelbase of 8 ft. 6 in.; Hyatt roller bearings are fitted, with Simplex unit-cylinder clasp brakes and controllers of the American Brake Shoe type to prevent wheels from skidding. The bogie centre-plates are insulated with rubber.

An unusual feature is that the bogies are equipped with lateral as well as vertical shock-absorbing devices. Hydraulic Monroe shock absorbers, two on each bogie, are connected between the bolster and the bogie transom, on the underside, to cushion lateral shocks, while the customary shock absorbers are mounted between the bolster ends and the bogie frame to damp out vertical shocks. The lateral shock absorbers are designed specially to ensure easy riding when the trains enter curves without a considerable reduction of speed.

Accommodation

The baggage and mail cars are each 70 ft. long, and weigh 41 and 43½ tons respectively; the remaining cars are 85 ft. long and weigh 51 tons each, except the dining car, which weighs 52½ tons. Each train, therefore, weighs 341 tons (of 2,240 lb.), or 482 tons with locomotive. There is seating for 220 passengers in a train, with 38 additional seats in the smoking lounges, one of which is provided in each of the four passenger cars.

The accommodation in the trains, which are in the "all-coach" category (the equivalent of British third class) is luxurious. For the first time, seats of the Wakefield "Sleepy-Hollow" type have been installed, designed as the result of measurements of nearly 4,000 people, made to determine, on scientific lines, sitting requirements and postures.

Each seat is 20 in. long, 19 in. wide, and is raised 17 in. from the floor; the back height is 28 in., the shoulder breadth 19 in., and the elbow rest is 8½ in. above the seat. The seat can be adjusted to ten different angles, and the footrest has four positions; a feature of the chair is the full support given to the entire body in the reclining position. Between the centres of seats in the longitudinal direction there is a distance of 3 ft. 5½ in.

Reading lights are installed under the luggage racks, with beams so directed that each passenger, whether in a window seat or an aisle seat, has his own high-intensity light concentrated on the reading plane at that seat, with a switch under his own control. Maximum light in the aisles is given by ceiling fixtures which project a narrow high-intensity beam through prism lenses to the width of the aisle without extending over the seat area.

Cycle-modulation zone-control heating equipment is installed for winter use, and Frigidaire air conditioning for the summer; the freshness of the air supply by the latter is secured by filters, placed in the re-circulated air flow, which contain activated carbon made from cocoanut shells, and automatically take tobacco and other fumes out of the air.

Dining Car Features

The dining cars introduce many novel features. Unusually in American dining-car practice, the kitchens are central, and are flanked by two dining sections, each seating 22 persons. The kitchen section occupies 109 sq. ft. of floor space, and has no windows, so that there may be full utilisation of wall space. It is air conditioned and equipped with powerful exhaust fans; other equipment includes ordinary refrigeration, and deep-freeze units for out-of-season foods.

The arrangement of the dining sections

is unique. There are tables for two or four diners, of rectangular, square, and triangular shape, fitted at an angle into the car walls, in deeply cushioned alcoves, and carried entirely on brackets instead of on legs, so giving a maximum of leg room to the passengers. The triangular space at the junction of the diagonal seats is used for bottles, cruets, menus, and other purposes, which helps to relieve the table space. Beautiful lighting effects are obtained by ceiling lighting fixtures in block prism glass, placed sufficiently close to make practically one continuous lighting fixture in each saloon. Throughout the train, novel and restful colour schemes have been used.

Train Communication

Reference has been made previously to the radio-telephone communication between enginemen and train crew. Radio equipment of very high frequency is used, and consists of a 10-watt transmitter, receiver, power unit, and control panel on each train, with hand-microphone set and loudspeaker. This enables the enginemen and train crew to discuss the operation of the train, to confirm train orders, and to report hot boxes or mechanical failures. Remote controls of the radio system are provided in each car, and each car has a light and a chime bell which call the conductor's attention when a signal is received. The equipment is frequency modulated, and is designed for use in the 152-162 megacycles band.

Radio communication is also operative between the train and the yardmaster's office at Grand Rapids. This latter enables the conductor to advise the yardmaster of the approach of the train, or, in the opposite direction, of the train's leaving yard limits; it also permits the yardmaster to give any special instructions that may be necessary.

The purpose of the equipment is to increase the safety of high-speed train operation, and additional lineside receiving and transmitting sets are planned throughout the route. It is also proposed to provide the train crews with portable radio equipment, so that they may be able to talk direct to the engine crew or the train conductor if in any emergency they are away from the train.

Special features of the operation of the "Pere Marquette" streamline trains include the service of the dining cars by waitresses instead of waiters, paid on a scale which has made possible the complete abolition of tips. When travelling by the trains, passengers are permitted to make their reservations by telephone, and to receive and pay for their tickets on the trains, without any extra charge for this service; this avoids the trouble of going to a station booking office for the purpose. Each train carries a passenger representative who sees to the seating of patrons in accordance with the train seating diagram, and sells the necessary tickets; also, he makes arrangements, if desired, for return reservations on the same basis.

In the first weeks of its operation, this system has worked perfectly and has been received with much appreciation by the passengers. Indeed, in spite of the excellent system of highways paralleling the route, questioning of individual passengers has revealed that many of them have been attracted from the use of private cars and the bus lines by the excellence of the trains.

Attractive Exterior Finish

The attraction of the interior is further enhanced by the exterior finish of the trains. Roofs and the car side walls are finished in blue, with a maize-yellow band above the windows, and a stainless-steel band below, extending the entire length of each train. The upper part of each locomotive, above the stainless band, is blue; the nose fender, below the stainless steel, is yellow, with curved yellow sides extending up on each side of the headlights and then carried down to vanishing point about midway along the locomotive side.

Two headlights are fitted, one of the usual fixed type, and the other a Mars headlight which throws a figure-8 rotating beam up into the sky, normally white, but red in case of emergency. The name "Pere Marquette" appears on the nose and each side of the locomotive and above the windows of each coach.

Running Shed with Aluminium Roof Trusses

Advantages of reduced weight and resistance to corrosion

THE East St. Louis running shed on the Alton & Southern Railroad, U.S.A., has a roof supported by trusses with a 57-ft. span. Before 1930, traffic was comparatively light, but subsequently the shed has been used more intensively, with the result that corrosion of the steel roof trusses became a serious problem. In four of them it became so bad that the cross-section of some of their members—notably in the top chords—was reduced in area by as much as 80 per cent.

It was decided, therefore, to replace them with new trusses fabricated entirely from aluminium-alloy sections and rivets. The design of these new trusses, described recently in our American contemporary, *Railway Engineering & Maintenance*, differs from that of the original steel trusses only in that the thickness of the members is increased slightly to meet the stresses for which they are intended. In spite of this increase, the aluminium trusses weigh only just over 16 cwt. each, whereas the steel trusses, when new, weighed 1 ton 18 cwt.

This is believed to be the first use of aluminium in a running-shed roof as a measure to combat corrosion set up by fumes from steam locomotives. The trusses were designed and erected under the supervision of Mr. W. J. Neubling, Chief Engineer, Alton & Southern Railroad, East St Louis.

Aluminium roof trusses in engine house at East St. Louis, Alton & Southern Railroad, U.S.A.

Passenger Comfort in Pere Marquette Railway Streamliners

View of coach and lounge

Full interior view of one of the coaches

Passenger Comfort in Pere Marquette Railway Streamliners

The tavern section of the dining car

The dining car, showing rectangular and triangular tables and seating arrangement

New 2-8-2 Class " XD " Tender Locomotives for India

A design which conforms mainly to that of existing locomotives of this class, but embodies several modifications and improvements

THE North British Locomotive Co. Ltd. has completed 110 locomotives of the 2-8-2 type, with double-bogie tenders, for the India Store Department. Generally, the existing standard design, known as class "XD," numbers of which have already been delivered by the same builders, has been followed, but the new engines include certain modifications which will be referred to later in this article.

The design incorporates the standard characteristics of locomotives for the 5 ft. 6 in. gauge in India. Plate frames have been adopted, with inside bearings for the leading pony truck, the springs of which are connected with those of the leading coupled wheels by a compensating beam.

Outside bearings are used for the trailing wheels below the firebox, which have a side play of 5½ in. The coupled wheels are oversprung, with compensating beams fitted between the first and second, and between the third and fourth pairs; the axleboxes are fitted with wedges in front.

The coupled wheels, 5 ft. 1½ in. in diameter, are driven by two outside cylinders, 22½ in. dia. by 28 in. stroke; the connecting rods are 11 ft. between centres. Walschaerts gear distributes the steam through 12 in. inside admission piston valves.

Boiler and Firebox

The boiler barrel is in three telescopic rings; the maximum inside diameter is 5 ft. 10⅜ in., and the length between tubeplates 18 ft. 6 in. The round-topped firebox has a wide grate spreading over the frames; the inside width of 6 ft. 4⅜ in. and the length 7 ft. 0⅞ in., give a grate area of 45 sq. ft. A 26-element superheater, with a heating surface of 540 sq. ft., is provided, and the regulator is incorporated in the dome. The working pressure is 180 lb. per sq. in.

Four arch tubes assist circulation and add a further 25 sq. ft. to the heating surface. Two Gresham & Craven No. 10 injectors (reversible pattern) deliver water through top-feed clacks situated on the front ring of the boiler barrel. A mud door, 1 ft. 4 in. in diameter, is situated at the bottom of the same ring. The firegrate is of the rocking type, actuated by a steam cylinder; a hopper ashpan is fitted, controlled from the cab, and ash-drenching fittings also are provided. Smokebox ash is minimised by the design of baffle plates between the blast pipe and the front tubeplate.

Weight Distribution

The weight of these engines is distributed very evenly and does not exceed 17 tons per coupled axle. The height of the top of the chimney is 14 ft., and the maximum width over platform 10 ft. 6 in.; the centre line of the boiler is pitched 9 ft. 6 in. above the rails. Engine and tender have a combined wheelbase of 66 ft. 8 in., and the total length over buffers is 76 ft. 6½ in. In working order the engine weighs 98 tons 7 cwt. and the tender (with 13 tons of fuel and 4,500 gallons of water) 66 tons 10 cwt., giving a total of 164 tons 17 cwt.

The cab is well arranged, and the driver's position is on the right-hand side. The regulator can be operated from either side and can be clamped in any position by a small handwheel. Reversing is effected by wheel and screw. A solid-jet combination ejector works in conjunction with a graduable steam valve, applying steam brakes on the engine and vacuum brakes on the tender and the train. A Wakefield "AC" type sight-feed lubricator is fitted, having four feeds for cylinders and valves. A " Clyde " soot blower also is provided.

A 500-watt turbo-generator, by J. Stone & Co. Ltd., of Deptford, is fixed to a bracket on the left-hand side of the boiler barrel, at hand-rail height, and supplies current at 32 volts for the lighting circuit.

The principal dimensions are:—

Cylinders (2), dia × stroke	22½ in. × 28 in.
Coupled wheels, dia.	5 ft. 1½ in.
Leading pony truck wheels, dia	3 ft. 0 in.
Trailing pony truck wheels, dia.	3 ft. 7 in.
Wheel-base, rigid	17 ft. 3 in.
" total engine	35 ft. 0 in.
" total engine and tender	66 ft. 8 in.
Boiler pressure	180 lb. per sq.in.
Heating surface :	
Tubes—	
26 flue, 5½ in. out. dia. × 8 W.G. thick	688 sq. ft.
114 small, 2¼ in. out. dia. × 11 W.G. thick	1,242 "
Firebox	190 "
Arch tubes (4), 3 in. out. dia. × 7 W.G. thick	25 "
Total evaporative	2,145 sq. ft.
Superheater	540 "
Total	2,685 sq. ft.
Grate area	45 sq. ft.
Tractive effort at 85 per cent. boiler pressure	35,264 lb.
Weight in working order :	
Adhesive	68 tons
Total engine	98 tons 7 cwt.
Tender	66 tons 10 cwt.
Engine and tender	164 tons 17 cwt
Tender wheels, dia.	3 ft. 7 in.
" wheel-base	22 ft. 6 in.
Water capacity of tender	4,500 gal.
Coal capacity of tender (580 cu. ft.)	13 tons

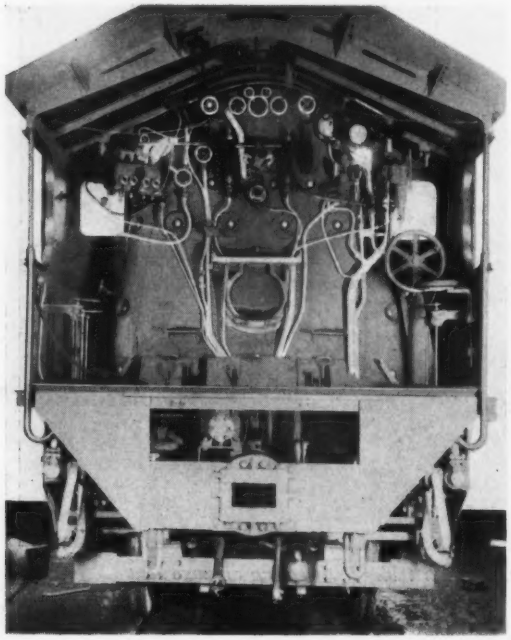
Modifications

As regards the boiler, the chief modifications are the fitting of a " Joco " regulator and the double-curve arch tubes in the firebox. The firedoor is of Indian standard type, opening into the firebox like Webb's well-known L.N.W.R. pattern. A firehole protector of suitable design for hand firing is fitted; there is no provision on these locomotives for a mechanical stoker.

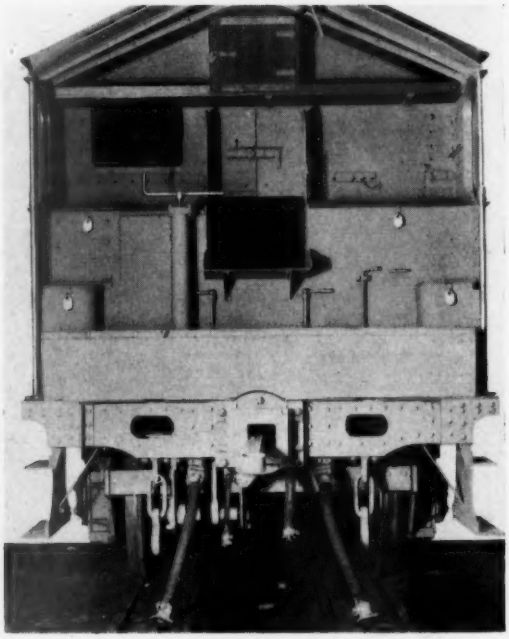
The cylinders are provided now with cast-iron barrel liners. The piston valves are of the trunk type, and each head is fitted with five narrow rings. The bodies of the coupling rods are of rectangular section, and all crankpins are fitted with floating bushes. Hand-operated sanding gear is provided, instead of Lambert sanding.

The trailing wheels now form a hind pony truck of the radial-arm type, in place of the radial axlebox with Cartazzi slides applied to the earlier engines. Timken

(*Continued on page* 170)



General view of the cab



View of the tender

One of the new 2-8-2 class "XD" locomotives built by the North British Locomotive Co. Ltd. for India

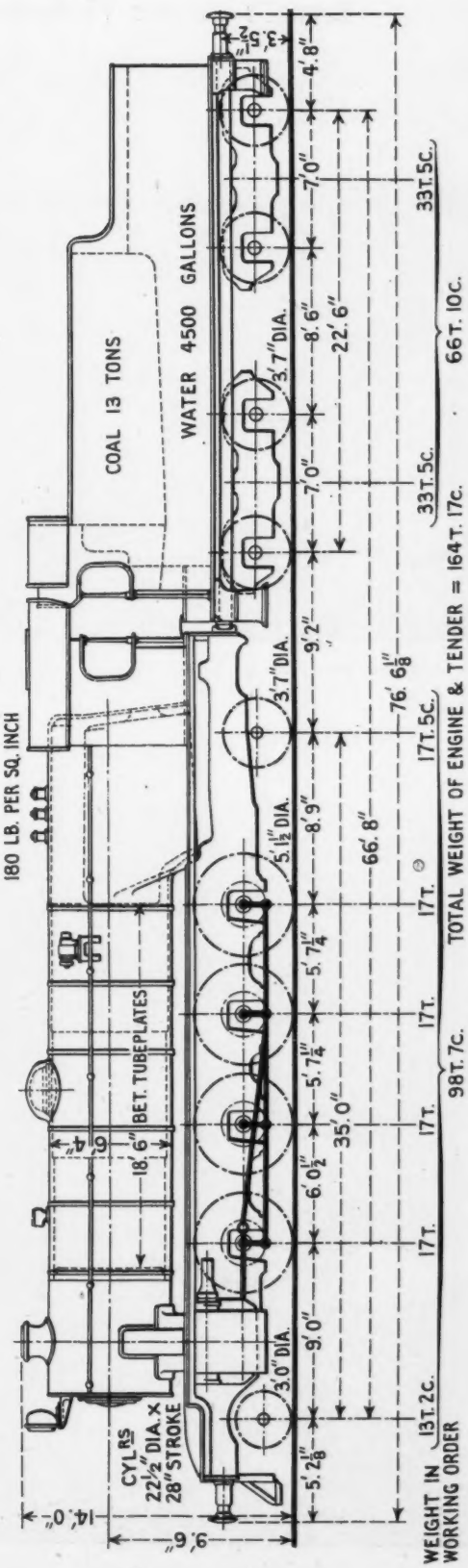
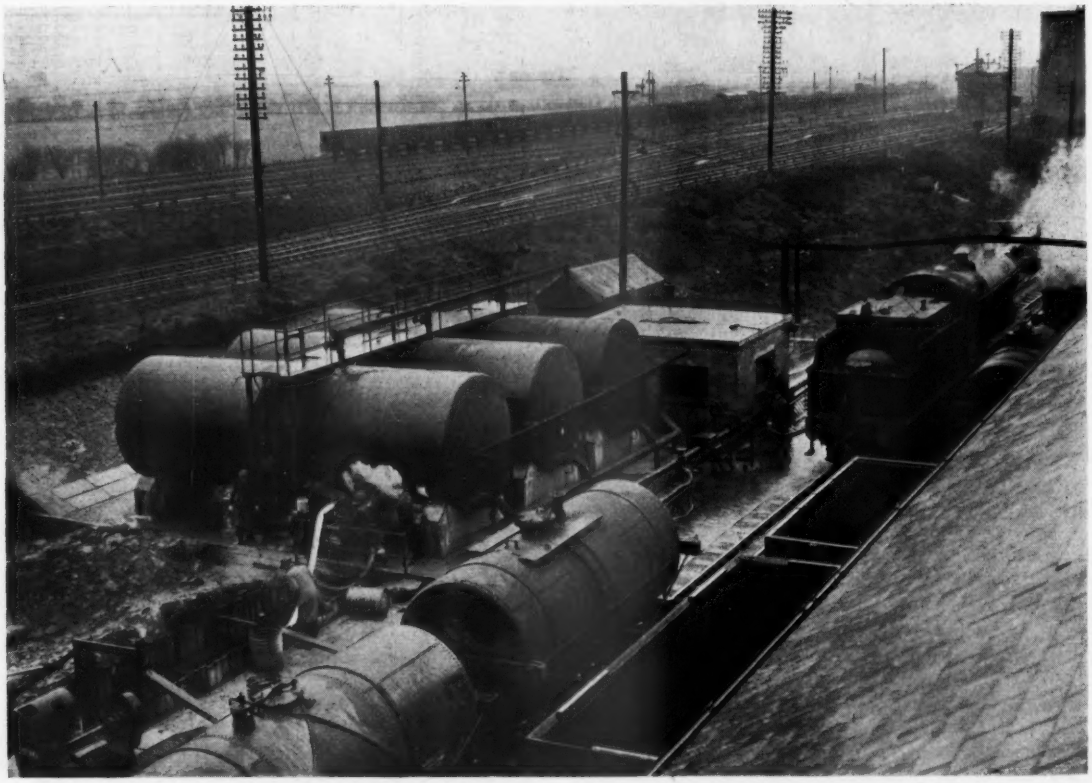


Diagram showing principal dimensions and weights of the locomotive

Brunel's Timber Viaduct on the Dare Branch, G.W.R.

The last two survivors of Brunel's timber viaducts, at Dare (illustrated above) and at Gamlyn, are being dismantled (see our January 24 issue and editorial note on page 150)

A G.W.R. Refuelling Depot for Oil-Fired Locomotives



Replenishing the storage tanks and refuelling a locomotive at Severn Tunnel Junction

RAILWAY NEWS SECTION

PERSONAL

Mr. M. A. Metcalf, Executive Assistant to the President, has been appointed Vice-President & Executive Assistant, Canadian National Railways.

Mr. Harold Wilmot, F.C.W.A., M.I.Loco.E. (Managing Director of Beyer, Peacock & Co. Ltd.), has been elected President of the Locomotive Manufacturers' Association, in succession to Mr. F. S. Whalley, M.C., M. I. Mech. E., M. I. Loco. E. (Chairman of the Vulcan Foundry Limited), who has been President of the Association since 1936. A portrait and some biographical details of Mr. Whalley were published in our June 28, 1946, issue.

Sir Arthur P. M. Fleming has been appointed a Director of British Industrial Plastics Limited.

Sir Edwin Noel Plowden has been appointed a Director of the British Aluminium Co. Ltd.

Mr. E. O. Faulkner has been appointed a Local Director of Glyn, Mills & Company.

Mr. Robert Arbuthnott has been elected to the board of the North British Locomotive Co. Ltd., and appointed Joint Managing Director.

Mr. A. H. Hird, who is in charge of engineering sales of Vickers-Armstrongs Limited, has been elected to the board.

We regret to record the death on January 27, at the age of 82, of Mr. Thomas Johnstone Bourne, C.B.E., who was Engineer-in-Chief, Pukou-Sinyang Railway, 1913-26.

L.N.E.R. STAFF CHANGES

Mr. C. S. McLeod, Assistant Divisional General Manager, Scottish Area, to be Principal Assistant (Staff), Chief General Manager's Office.

Mr. G. C. Gold, Mechanical Engineer, Gorton, to be Mechanical Engineer, Stratford, subsequent to the death of Mr. F. W. Carr; and Mr. G. Caster, Locomotive Works Manager, Gorton, succeeds Mr. Gold as Mechanical Engineer, Gorton.

On the retirement of Mr. R. W. McEwen, Mr. T. Wooding, Assistant to Revenue Accountant (Merchandise), to be Revenue Accountant (Merchandise).

Consequent on changes in organisation in the Locomotive Running Superintendent's Department, N.E. Area, Mr. F. H. Petty, District Locomotive Superintendent, York, to be Assistant Locomotive Running Superintendent, N.E. Area.

Mr. S. A. Finnis, Assistant Passenger Manager, N.E. Area, to be Assistant to Divisional General Manager, N.E. Area.

Mr. H. M. Lattimer, Assistant District Superintendent, Newcastle, to be District Superintendent, Sunderland; and Mr. T. V. Nicholson, Assistant District Passenger Manager, Newcastle, succeeds Mr. Lattimer as Assistant District Superintendent, Newcastle.

Elliott, Ltd. Bry

Mr. Harold Wilmot

Managing Director, Beyer, Peacock & Co. Ltd.; elected President, Locomotive Manufacturers' Association

Mr. Harold Wilmot, F.C.W.A., M.I.Loco.E., Managing Director of Beyer, Peacock & Co. Ltd., has been elected President of the Locomotive Manufacturers' Association. Mr. Wilmot was born in 1895. After service in the Army for four and a half years in the 1914-18 war, he joined Charles McNeil & Co. Ltd., Glasgow, and served a special post-war apprenticeship for five years in the drawing office and works, and in the various departments connected with estimating, planning and progress, costing and works control. He displayed a special interest in, and aptitude for, the problems connected with production management and control, and in 1924 he was invited to join Beyer, Peacock & Co. Ltd. as Cost Accountant. He became Chief Accountant in 1926, and Comptroller in 1929. He reorganised the estimating, storekeeping, cost accounting and accounting functions; codified all the activities of the company; and installed punched-card methods, of which he was one of the pioneers in this country. In 1933 Mr. Wilmot was made Acting General Manager, and in 1934 was confirmed as General Manager. In the same year he became Managing Director of Richard Garrett Engineering Works Limited, with factories at Leiston, Suffolk. In 1938 he was appointed Managing Director of Beyer, Peacock & Co. Ltd. He is Chairman of the local board which co-ordinates the activities of those companies; and is on the boards of various subsidiary and associated companies operating in specialised fields. Mr. Wilmot has toured the U.S.A. and Canada, and on two occasions has visited Moscow to negotiate locomotive contracts. In 1939 he led a delegation of the Locomotive Manufacturers' Association to Turkey in connection with large locomotive contracts secured under the Anglo-Turkish Loan. For some years Mr. Wilmot was Chairman of the North Western Management Research Group. In 1943 he became President of the Institute of Cost & Works Accountants, which office he held for three years. He is also a member of a number of learned societies. He is the author of many papers on management subjects, and holds a number of patents in respect of specialised machinery. His hobbies are music, poetry and golf.

The following notification appears in the Supplement to *The London Gazette*, dated December 27, 1946, under the heading of Regular Army—Royal Engineers:—

Lt.-Colonel C. A. Langley, M.C. (13390), retires on retired pay, December 27, 1946, and is granted the honorary rank of Brigadier.

Mr. Gordon McKay Campbell has retired from the board of the British Thomson-Houston Co. Ltd. He joined the company from the General Electric Company, U.S.A., in 1920. Mr. Campbell directed the manufacturing operations of all B.T.-H. factories.

Mr. Ronald Leslie, a Director of the Central Argentine Railway Limited, recently arrived in Buenos Aires.

Mr. E. W. Impey, the Great Western Railway Company's Show Representative, retired on February 3.

BELGIAN NATIONAL RAILWAYS

The following changes have been made in the directorate of the Belgian National Railways:—(1) creation in the Directorate-General of a Secretariat-General; (2) fusion of the Directorate of Personnel with that of Welfare Services; (3) creation of an Electrical & Signalling Directorate. The following appointments have been made:—

Dr. A. Huyberechts to be Director of Welfare Services, with the rank of Deputy Director-General.

M. P. Nolet de Brauwere van Steeland to be Director of Personnel, with the rank of Secretary-General.

M. P. Verbeemen to be Inspector-in-Chief, assistant to Director of Personnel, with the rank of Director of Personnel & Welfare Services.

M. E. Derijckere to be Engineer-in-Chief in the Directorate of Permanent Way, with the rank of Electrical & Signalling Director.

The Directorate is now constituted as follows:—M. F. Delory, Director-General; M. G. Olivier, Deputy Director-General; Dr. A. Huyberechts, Deputy Director-General; M. P. Nolet de Brauwere van Steeland, Secretary-General; M. J. Colle, Director of Working; M. P. Ghilain, Loco-

XUM

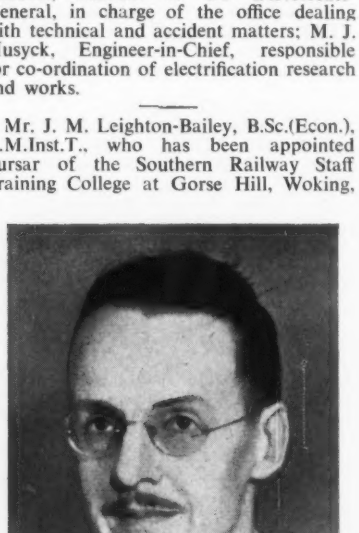
motive & Running Director; M. J. Boucique, Director of Permanent Way; M. E. Derijckere, Electrical & Signalling Director; M. M. Lemaire, Director of Finance; M. P. Verbeemen, Director of Personnel & Welfare Services; M. L. Antoine, Director of Commercial Services; M. G. Willaert, Adviser to the Directorate-General, in charge of the office dealing with technical and accident matters; M. J. Musyck, Engineer-in-Chief, responsible for co-ordination of electrification research and works.

Mr. J. M. Leighton-Bailey, B.Sc.(Econ.), A.M.Inst.T., who has been appointed Bursar of the Southern Railway Staff Training College at Gorse Hill, Woking, appointed Traffic Superintendent, and will have charge of the operating and commercial activities of the N.C.C.; and Mr. R. L. Charlesworth, Assistant District Goods & Passenger Manager, Bristol, L.M.S.R., has been appointed Steamship Superintendent, Belfast.

Mr. H. T. Carr, Acting Publicity Officer, L.P.T.B., has retired. Mr. H. F. Hutchison has been appointed Publicity Officer to the Board.

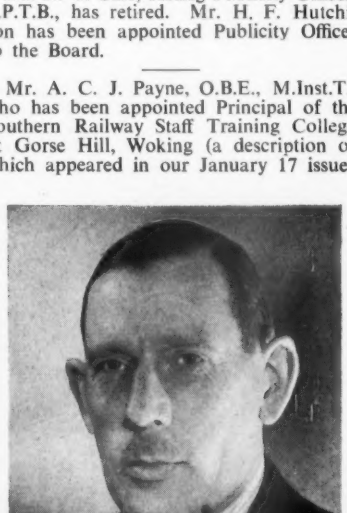
Mr. A. C. J. Payne, O.B.E., M.Inst.T., who has been appointed Principal of the Southern Railway Staff Training College at Gorse Hill, Woking (a description of which appeared in our January 17 issue), Abraham (Assistant Superintendent of Motive Power, L.M.S.R.). Mr. A. J. Pritchard, of Swindon, was re-elected Secretary. At the annual dinner, held afterwards, the guests of honour were two foundation members, Mr. W. G. P. Maclure, late Great Central Railway, and Mr. L. C. Geach, late Midland Railway. The third surviving member, Mr. F. W. Attock, late Lancashire & Yorkshire Railway, was unable to be present.

Mr. A. C. Jeffrey, Assistant District Locomotive Superintendent, Carlisle (Kingmoor), L.M.S.R., who, as recorded in our January 3 issue, has been appointed District Locomotive Superintendent, Inverness, received technical training at the Royal



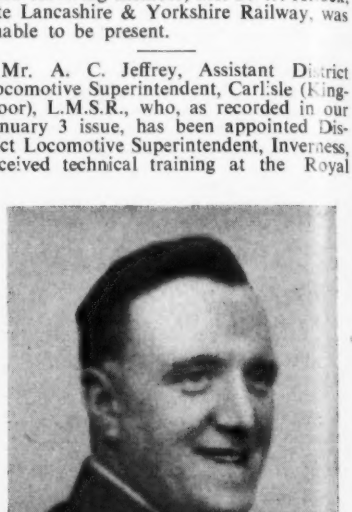
Mr. J. M. Leighton-Bailey

Appointed Bursar, Staff Training College, Southern Railway, Gorse Hill, Woking



Mr. A. C. J. Payne

Appointed Principal, Staff Training College, Southern Railway, Gorse Hill, Woking



Mr. A. C. Jeffrey

Appointed District Locomotive Superintendent, Inverness, L.M.S.R.

joined the Southern Railway at Goringby-Sea in 1926 and had experience at stations and divisional commercial managers' and superintendents' offices. In 1932 he was selected for training in the work of all departments as a cadet. In 1938 he was appointed Outdoor Assistant to the Superintendent of Operation, and held that position until his present appointment. Mr. Leighton-Bailey is a Bachelor of Science (Economics) of the London University (Honours in Transport), and was awarded the Brunel Medal of the London School of Economics; he is an Associate Member of the Institute of Transport, serving on the Council of the Institute from 1944 to 1946, and is a member of the provisional committee of the Institute of Transport Metropolitan Section. He has also acted as author-tutor for the subject of Railway Transport Operation under the Army Education Department's scheme of correspondence courses for members of H.M. Forces; and is a member of the Transport Tutorial Committee, founded in 1945 with the approval of the Council of the Institute of Transport to provide similar courses for civilian students unable to attend class instruction.

The L.M.S.R. Northern Counties Committee announces that Mr. R. H. Murphy, Commercial Superintendent (N.C.C.), and Steamship Superintendent, Belfast, has retired from the service. Mr. A. McCleery, Operating Superintendent, has been entered the railway service in 1919 after nearly four years' active service. He had experience at Headquarters in Staff, Passenger Rolling Stock and Rules Sections, prior to being appointed Assistant to the Western Divisional Superintendent in 1934. In 1937 he was transferred to a similar appointment in the London Central Division. During 1942, whilst on active service, he was promoted Assistant Divisional Superintendent, London East Division. From 1928 to 1934 Mr. Payne was instructor in Signalling, Rules and Regulations at the S.R. Training School then situated at East Croydon. He also lectured at the University College of Southampton on Railway Operating. As a member of the Supplementary Reserve he was called up at the outbreak of the recent war and served on the Movements and Transportation side of the Army in France, Egypt, Palestine, Syria, Iraq, Italy and Belgium, being promoted to the rank of Colonel early in 1943. In the New Year Honours, 1942, he was awarded the O.B.E. (Military), and he was made a Member of the Institute of Transport in June, 1946.

The annual meeting of the Association of Railway Companies' Locomotive Running Superintendents was held at the Great Eastern Hotel, Liverpool Street, recently, when Mr. E. D. Trask (Locomotive Running Superintendent, Scottish Area, L.N.E.R.) was elected President for the current year, in succession to Mr. F. W. Technical College, Glasgow, and served an apprenticeship at the works of the Caledonian Railway, St. Rollox, from 1914-20. He was a chargehand fitter at Corkerhill, L.M.S.R., from 1930-33, and in 1934 was appointed Mechanical Inspector, Operating Manager's Office, Glasgow. Mr. Jeffrey subsequently held positions as Mechanical Foreman, Polmadie (1936-37), Running-Shed Foreman, Corkerhill (1938-39), and Assistant District Locomotive Superintendent, Perth (from 1939), before being appointed Assistant District Locomotive Superintendent, Carlisle (Kingmoor), in 1946.

Mr. George Orton, Chief Officer for Public Relations, Great Western Railway, gave an organ recital at Butlin's Holiday Pageant and Campers' Reunion at the Royal Albert Hall on February 3 and 4.

Colonial Railway Appointments

The Secretary of State for the Colonies has approved the following appointments:—

Mr. F. J. Hillier to be Electrical Engineer, Federated Malay States Railways.

Mr. C. O. Parker (Staff Accountant) to be Chief Accountant, Gold Coast Government Railway.

Mr. G. S. Dick, Chief Engineer, Sierra Leone Government Railway, to be Assistant Chief Engineer, Nigerian Railway.

The Transport Bill in Standing Committee

Opposition amendments defeated

The opposition to the Transport Bill was launched when the House of Commons Standing Committee held its first meeting to consider the Bill on February 4. A list of members of the Standing Committee was given in our last week's issue.

Supporting Sir David Maxwell Fyfe (West Derby—C.) in a demand that the number of members of the Transport Commission should be increased from the proposed four to eight, excluding the chairman, Colonel J. R. H. Hutchison (Glasgow Cen.—C.) said: "This is another case of overloading of Ministers. Ministers are no supermen, and they are trying to do jobs that are far too large for them.

Conservative members unsuccessfully resisted a proposal by the Minister (Mr. Alfred Barnes) that the Committee should meet three times a week so as to make a special effort to get through it in a reasonable time.

Number of Members

Sir David proposed that the number of members of the Transport Commission to be set up under the Bill should be increased from four to eight, excluding the chairman. He said that this was proposed in consideration of the volume of work which would have to be done. "It is obvious," he said, "that this Commission has to face the biggest job of any public utility, and it was odd that the Coal Board had a chairman and eight other members, the Central Electricity organisation had a Chairman and maximum of 11 other members, while only four members, apart from the chairman, were proposed for transport.

"We are anxious to see, not only all sections of the community represented, but all the great interests in the community. We have first the question of co-ordination, followed by decentralisation, and the application of transport to local needs, the question of charges, and of evolving the principle on which traders or manufacturers are to be allowed to use their own vehicles for the transport of their own goods. The immensity and complexity of these problems is too great for a Commission of four and a chairman."

Colonel J. R. H. Hutchison (Glasgow Central—C.) supporting the amendment, said that there was a danger in the present schemes of nationalisation that the Boards set up to administer them were so big as to be unwieldy, or for Ministers to become dictators.

Mr. G. E. P. Thornycroft (Monmouth—C.) supported increased membership of the Commission, and said that the Minister had not made it clear what type of men he wanted to serve on the Commission and immediately under it.

While not supporting the amendment, Mr. C. McLeavy (Bradford East—Lab.) said that the members of the Commission should be whole-time members and not connected with outside interests. They were anxious that the Minister of Transport should give further consideration to the question as to whether there should be some compromise.

Replying to Mr. Thornycroft, who said it would be as well to have men of experience in private transport on the Commission, Mr. Ernest Davies (Enfield—Lab.) said: "We want men who are transport minded, not railway or road or dock minded, but people who can envisage as a whole, and without sectional interests."

The amendment was rejected by 26 votes to 16, after Mr. Barnes had said that if they increased the number, they would have to include bodies like the T.U.C.

Colonel A. D. Dodds-Parker (Banbury—C.) moved an amendment proposing that representatives of transport users should be appointed to the Commission.

Major David Renton said that, for the first time, the user of transport was not going to have freedom of choice, and a safeguard of a representative of transport users was necessary. He said that, under private enterprise, the customer was always regarded as being right; if that principle were to be maintained, it was appropriate that a representative of the customers should be on it.

Mr. W. T. Proctor (Eccles—Lab.), who opposed the amendment, said that if a representative of transport users were to be appointed, a T.U.C. representative would be the most appropriate, because the greatest user of transport in the country was the working class.

Mr. G. R. Strauss (Parliamentary Secretary, Ministry of Transport) said he was unable to accept the amendment.

A most remarkable feature of the debate on the amendment, he said, was that no one, so far, had mentioned the elaborate machinery which it was proposed to set up under the Bill to protect the detailed requirements of the consumers.

The Bill provided for the setting up all over the country of essential consultative committees for the purpose of representing to the Commission and the Minister any special requirements of consumers. The people who were going to run the industry must be chosen by the Minister for their ability alone, and the Minister must be unrestricted in his choice. The responsibility must be solely on the Minister who was answerable to Parliament for all the individuals on this committee.

Captain Thornycroft said that the Parliamentary Secretary's reply showed a naive assumption that they could take four gentlemen, remove them from all competition, and then, when they had got them in this rarified atmosphere expect them to study the consumer all the time.

The amendment was defeated by 26 votes to 14 votes.

A Liberal amendment stating that members of the Transport Commission should have special experience of the transport problems of Wales and Scotland was negatived by 23 votes to 15 votes.

The Committee then adjourned until Thursday.

Petition Against Transport Bill

Lt.-Colonel Sidney Shephard (Newark—C.), in the House of Commons on January 29, presented a petition on behalf of a large number of persons in the East Midlands traffic area against the nationalisation of the road transport industry. He said that the petition had been signed by more than 40,000 persons, and the prayer of the petition was: "We, your petitioners, humbly pray your honourable House to reject any proposals which may hereafter be submitted to Parliament for approval or for legislation with the object of replacing private enterprise in the provision of road transport by a nationalised or Government-controlled system of transport, and your petitioners, as in duty bound, will ever pray."

The Royal Party leaving Waterloo for the South African Tour

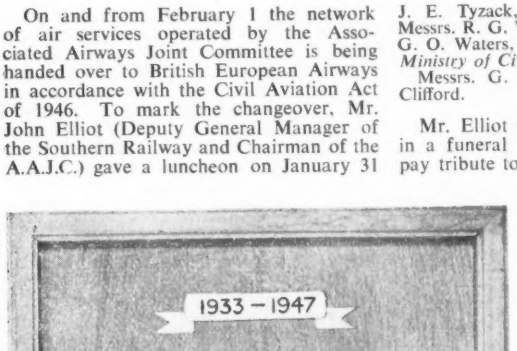
The decorated front end of the locomotive of the Royal Train in which the journey was made to Portsmouth

Colonel E Gore Browne, Chairman, Southern Railway, and Sir Eustace Missenden, General Manager, at Waterloo Station on January 31

British European Airways

Luncheon to mark beginning of B.E.A.C. operation of internal routes

On and from February 1 the network of air services operated by the Associated Airways Joint Committee is being handed over to British European Airways in accordance with the Civil Aviation Act of 1946. To mark the changeover, Mr. John Elliot (Deputy General Manager of the Southern Railway and Chairman of the A.A.J.C.) gave a luncheon on January 31 at the Charing Cross Hotel, at which Sir Harold Hartley, Chairman of British European Airways and the first Chairman of A.A.J.C., Mr. Gerard d'Erlanger, Director-General of B.E.A., and Mr. G. S. Dunnett, of the Ministry of Civil Aviation, were the principal guests. Others present were:—


1933 – 1947
Railway Air Services
Scottish Airways
Isle of Man Air Services
Great Western & Southern Air Lines
Presented by the Boards of the Rail-Sea group of Air Companies to the Board of the British European Airways Corporation, of which on February 1st, 1947 they became part.
These were the Pioneers.

Cap badges of railway-associated air lines

Associated Airways Joint Committee and Rail-Sea-Air Group—

Messrs. J. Elliot (Deputy General Manager, Southern Railway), K. W. C. Grand (Assistant General Manager, G.W.R.), E. N. Biggs (G.W.R.), W. P. Bradbury (Chief Commercial Manager, L.M.S.R.), G. Morton (Chief Accountant, L.M.S.R.), H. G. N. Read (General Assistant to Chief Commercial Manager, L.M.S.R.), O. H. Corble (Assistant General Manager, Ancillary Services, L.N.E.R.), L. H. K. Neil (Continental Traffic Manager, L.N.E.R.), H. L. Smedley (Solicitor, Southern Railway), C. Grasemann (Public Relations & Advertising Officer, Southern Railway), J. W. Ratledge (Coast Lines Limited), W. D. Roberts (Channel Islands Airways Limited), Captain G. P. Olley (Olley Air Service Limited), Wing-Commander A. H. Measures (A.A.J.C.), Messrs. T. H. Christie (A.A.J.C.), W. C. Gaskin (A.A.J.C.), R. L. Carter (Isle of Man Air Services Limited), Captain E. E. Fresson (Scottish Airways Limited), Messrs. W. Cumming (Scottish Airways Limited), H. P. Snelling (Great Western & Southern Air Lines Limited), H. G. Williams (Secretary, Continental Traffic Managers' Committee), P. W. Moffatt (Price, Waterhouse & Company), R. Simpson (Southern Railway).

British European Airways—

Sir Harold Hartley, Messrs. G. d'Erlanger, J. E. Tyzack, J. Brancker, Lord Amherst, Messrs. R. G. Weir, E. N. Driver, Commander G. O. Waters, Mr. E. O. Siepmann.

Ministry of Civil Aviation—

Messrs. G. S. Dunnett, J. McCaig, R. Clifford.

Mr. Elliot said he might have indulged in a funeral oration, but he preferred to pay tribute to the pioneers of the services. Of the internal air companies to be merged into the British European Airways, the chief were Railway Air Services, Scottish Airways, Isle of Man Air Services and Great Western and Southern Air Lines, into which at different times were merged Highland Airways, West Coast Air Services, Spartan Air Lines and Channel Air Ferries. These were the pioneers. The railways and the short sea shipping companies gave them their start, took them under their wide wing and powerfully aided them by all the means at their disposal, and he believed it would be said, when the history of British civil aviation was written, that the railways and shipping companies had played their part.

Of the original team he was glad to see present Sir Harold Hartley and Mr. O. H. Corble. Others included Mr. C. B. Collett (G.W.R.) and Mr. Gilbert Szlumper (Southern). On the administration side, Wing-Commander A. H. Measures had been a tower of strength and without his help the organisation could not have been built up.

The first of the railway associated internal air services had been started by Mr. K. W. C. Grand in 1933. Then there was Mr. W. D. Roberts of Spartan Airlines, Scottish Airways and Isle of Man Air Services.

Last but not least there was Railway Air Services, and here he would mention Commander G. O. Waters, originally commercial assistant to Wing-Commander Measures, and their old friend Mr. W. P. Bradbury (now Chief Commercial Manager of the L.M.S.R.). In addition, there were the Continental traffic experts, in the persons of Mr. L. H. K. Neil, of the L.N.E.R., Mr. R. H. Hacker, of the Southern, and Mr. Dennis Handover.

No doubt the interlinking arrangements between railways and air transport would be encouraged in the future as a result of the appointment that day of a standing joint committee. This will consist of Messrs. John Elliot (S.R.), K. W. C. Grand (G.W.R.), O. H. Corble (L.N.E.R.), W. P. Bradbury (L.M.S.R.), and Mr. John Brancker, Lord Amerherst and Mr. I Scott-Hill representing B.E.A.C.

Mr. Elliot then presented to Sir Harold Hartley a framed collection of the cap badges of the companies—Railway Air Services, Scottish Airways, Isle of Man Air Services and Great Western and Southern Air Lines—bearing the inscription: "Presented by the boards of the rail-way-sea group of companies to the board of the British European Airways Corporation, of which, on February 1, 1947, they became part; these were the pioneers."

Sir Harold Hartley, responding, said how much he appreciated the kindly thought behind the presentation. He paid tribut to the assistance he had at all times received from Messrs. John Elliot and K. W. C. Grand, whose quickness of mind, imagination, courage and incentive had been of great value.

Locomotive Manufacturers' Association Dinner

On Thursday, January 30, a dinner was held at Claridge's Hotel, London, W.1, in honour of Mr. F. S. Whalley, M.C., on his retirement after ten years from the Presidency of the Locomotive Manufacturers' Association of Great Britain. Mr. Harold Wilmot, who has succeeded Mr. Whalley as President, was in the Chair.

Those invited to attend the dinner were:—

Messrs. H. Kewney (Andrew Barclay & Co. Ltd.); K. R. Pearson (W. G. Bagnall Limited); Captain Hugh Vivian, H. Wilmot, W. Cyril Williams, L. T. Dawes (Beyer Peacock & Co. Ltd.); H. H. Lambert, G. W. C. Birdsell (Hudswell Clarke & Co. Ltd.); E. Alcock, John Alcock (The Hunslet Engine Co. Ltd.); Sir Frederick Stewart, D.L., J.P., Wm. Lorimer, W. D. Lorimer, A. H. Browning, R. Arbuthnott (North British Locomotive Co. Ltd.); F. S. Whalley, H. H. Saunders, A. Collingwood Lermit, V. S. Mullen (The Vulcan Foundry Limited); Harold A. Akroyd, (Yorkshire Engine Co. Ltd.); Gerald Collingwood, Keith F. Pearson (Robert Stephenson & Hawthorns Limited); John Kay (*The Railway Gazette*); J. W. Vaughan, O.B.E. (Locomotive Manufacturers' Association).

The toast of the "Guest of Honour," Mr. Whalley, was proposed by Mr. Harold Wilmot, who also presented Mr. Whalley with a memento of his ten years as President of the L.M.A. on behalf of the Locomotive Manufacturers' Association. Mr. Wilmot was supported by Mr. John Alcock and by Mr. W. D. Lorimer. Mr. Whalley responded to the toast and he was followed by Mr. John W. Vaughan, Secretary of the Locomotive Manufacturers' Association, who proposed the toast of the Association. This toast was supported by Mr. John Kay of *The Railway Gazette*.

New Class "XD" Locomotives for India

(*Concluded from page* 164)

roller-bearing axleboxes are fitted to both leading and trailing pony trucks, and to the tender bogies. Auxiliary bearing springs are not fitted on engine or tender, and the Goodall drawbar between engine and tender has been replaced by a drawbar of the ordinary type. Intermediate buffing blocks are fitted.

The tender drawhook is fitted with a volute spring, but the friction draft gear used on the earlier tenders can be substituted if required at a later date. The tender itself, of the double-bogie type, is not self-trimming; its capacity is 4,500 gal. of water and 13 tons of coal.

Inspection and supervision of the building of these locomotives and tenders was carried out under the direction of the Consulting Engineers, Messrs. Rendel, Palmer & Tritton.

Questions in Parliament

Restaurant Cars Licence Duty

Mr. J. H. Hudson (Ealing West—Lab.) on January 21 asked the Secretary to the Treasury what amount of licence duty was charged in respect of each restaurant car on the railways; and what was the total amount of such duty collected for the last complete financial year before the war.

Mr. Glenvil Hall (Financial Secretary to the Treasury) stated in a written answer: The answer to the first part of the question is £1 per annum; and to the second part, £1,355.

Railway Companies' Development Work

Sir Waldron Smithers (Orpington—C.) on January 23 asked the Minister of Transport what was the total of capital expenditure for which plans were ready of British railways for new permanent way, rolling stock and stations, and other development which the companies could not complete due to the bottle-neck in supplies.

Mr. Alfred Barnes (Minister of Transport) in a written answer stated: The main-line companies and the London Passenger Transport Board estimate that, due to difficulty in obtaining labour and materials, they will be unable to carry out, this year, work to the value of £37½ millions out of the total expenditure authorised by the respective boards. Very little of this expenditure represents new capital works, as distinct from replacements and reconstruction.

Transport Inquiries

Mr. S. Tiffany (Peterborough—Lab.) on January 21 asked the Minister of Transport if he would give the number of major inquiries which had been held dealing with the problem of transport between the two wars, and make a statement.

Mr. Alfred Barnes in a written answer stated: The following is a list of the more important official reports published since 1919:—

Select Committee on Transport (Metropolitan Area) Departmental Committee on the Handling of Goods Traffic (Gattie Committee Report) (Cmd. 492) (1919).

Departmental Committee on the Taxation & Regulation of Road Vehicles (Interim Report) (Cmd. 660) (1920).

Departmental Committee on Inland Waterways, 1920-21 (1st Interim Report not published) (2nd Interim Report, 1921) (1920).

Electrification of Railways Advisory Committees (Interim and Final Reports), 1920-21 (1920).

Light Railway Investigation Committee Report (1921).

Departmental Committee on the Licensing & Regulation of Public Service Vehicles (Interim Report) (1925).

Report of the London & Home Counties Traffic Advisory Committee on the Co-ordination of Passenger Transport Facilities in the London Traffic Area (1927).

Royal Commission on Transport, 1928-30 (Cmd. 3365, 3416, 3751 and 4048 (1928).

Standing Committee on Mineral Transport (Cmd. 3420) (1929).

Report on the Electrification of Main-Line Railways (1931).

Committee of Inquiry—London Motor Coach Services and Documents furnished by the Minister of Transport (1932).

The Conference on Road & Rail Transport (Salter Report) (1932).

The Transport Advisory Council's Report on Services & Rates (1937).

The Transport Advisory Council's Report on Service & Rates (Coastwise Shipping) (1938).

Transport Advisory Council's Report on the Proposals of the Main-Line Railway Companies (Square Deal) (1939).

Charges (Railway Control) Consultative Committee Report, 1940, on the L.P.T.B. (Increase of Fares) (1940).

Charges (Railway Control) Consultative Committee Report, 1940, for Increasing Charges of the Railway Companies and the L.P.T.B. (1940).

Clyde Estuary Committee Report (1945).

Charges Consultative Committee Report dated August 8, 1946, as to Adjustment of the Fares of the L.P.T.B. (1946).

Royal Trains

The Reverend R. W. Sorensen (West Leyton—Lab.) on January 27 asked the Minister of Transport if he was aware of the delay and inconvenience caused at Christmas and other times through priority arrangements for Royal trains; and if he would have this minimised.

Mr. Alfred Barnes in a written answer stated: The Royal journeys are arranged with due regard to the effect on other traffic, and I am aware of no justification for the suggestion underlying this question.

Electrification of Suburban Lines

Mrs. Leah Manning (Epping—Lab.) on January 27 asked the Minister of Transport what steps he was taking to relieve the chaotic condition of passenger traffic on the L.N.E.R. suburban lines.

Mr. Alfred Barnes stated in a written answer: The return to normal working at the Stratford depot will, I hope, enable conditions to be improved progressively. Satisfactory services in this area depend, however, on the completion of the electrification work now in hand.

Repair and Maintenance of Railways

Mr. David Renton (Huntingdon—Lib. Nat.) on January 27 asked the Minister of Transport what sum had been spent on the repair and maintenance of railways out of the Suspense Account formed for that purpose since the Government had taken over control of railways during the war; and how much was now standing to the credit of the Suspense Account.

Mr. Alfred Barnes in a written answer stated: Withdrawals to December 31, 1946, in respect of excess maintenance amount to £2½ millions. The balance in the Trust Funds, including interest at December 31, 1946, is approximately £152 millions.

Cheap Fare Facilities

Major F. E. Jones (West Ham, Plaistow—Lab.) on January 27 asked the Ministry of Transport whether cheap fare facilities would be provided for organised parties of Boy Scouts to travel to and from annual summer camps.

Mr. Alfred Barnes stated in a written answer: Cheap return tickets are available, by arrangement, for parties of Boy Scouts and others travelling to camp. From May 1 to September 30 these tickets are available on Tuesdays, Wednesdays, and Thursdays only. Under present conditions I regret that it is not possible to extend these facilities to week-ends during the summer months.

Dartford Loop Line Services

Major E. A. Bramall (Bexley—Lab.) on January 27 asked the Minister of Transport whether he was aware of the bad travelling conditions prevailing on the Dartford loop line; and whether he could hold out any prospect of improvement of that service.

Mr. Alfred Barnes in a written answer stated: I am informed that during peak periods the train service on the Dartford loop is up to pre-war level and cannot be increased due to lack of track capacity. Overcrowding is mainly due to the concentration of the peak loads into shorter periods of time. Immediate relief can only be affected by the staggering of working hours and the greater use by the public of the more lightly-loaded trains to Blackfriars and Holborn. The gradual replacement of existing rolling stock with the new six-a-side vehicles will provide further relief.

Surplus Locomotive in Sidings

Major J. A. Boyd-Carpenter (Kingston-upon-Thames—C.) on January 27 asked the Minister of Supply how many locomotives were standing unused at Richborough; and what action he was taking to make those locomotives available to the railway companies.

Mr. John Wilmot (Ministry of Supply) stated in a written answer: There are 196 surplus locomotives standing in sidings, of which 66 are at Richborough. These are the balance of a stock of surplus heavy freight locomotives for which a repair programme is proceeding. They will be made available for service on the railways as soon as they have been repaired.

Public Relations and Press Departments

Mr. H. W. Butcher (Holland with Boston—Lib. Nat.) on January 23 asked the President of the Board of Trade what increase in personnel and cost there had been in the Public Relations and Press Departments of his department as compared with the position before the war.

Sir Stafford Cripps (President of the Board of Trade): A staff of 88 is engaged on information services for home and overseas in my department: the cost during the quarter ended December 31 last was approximately £9,000. No special provision was made for this work in the Board of Trade before the war, when the work to be done differed widely from that at present undertaken.

Transport Between Beccles and Bungay

Mr. Edward Evans (Lowestoft—Lab.) on January 27 asked the Minister of Transport, if in view of the inadequate service of trains between Beccles and Bungay and the infrequency of the bus services, he would arrange to have these considerably improved.

Mr. Alfred Barnes stated in a written answer: There are now five trains in each direction between Beccles and Bungay on weekdays. Before the war there were six regular trains on weekdays and two on Sundays. In present circumstances I should not be justified in asking the railway company to increase the service. The bus services are almost up to pre-war strength on weekdays. Any specific demand, supported by evidence of need, will be examined, but no further improvement is likely until an additional vehicle becomes available.

Southern Railway Pension Schemes

Mr. W. McAdam (Salford North—Lab.) on January 27 asked the Minister of Transport if he had considered the correspondence sent to him by himself as to the attitude of the Southern Railway Company in respect to existing voluntary pension schemes; and what action he proposed to take to preserve the continuity of payment from those funds until such times as they were taken over by his department.

Mr. Alfred Barnes in a written answer stated: I have seen certain correspondence relating to two schemes applicable to employees of the Southern Railway Company. Any modification of one of them would be the result of action by the managers of the fund and not of the company. The second is a non-contributory scheme, and the company intends, as I

understand, to reduce the pensions allowed by them, in the case of officers reaching sixty-five after September, 1946, as increased pensions become available to the recipients under the National Insurance Act, 1946, but always so that the aggregate pension of any individual will not be less. I am making further inquiries into this matter.

European Transport Organisation

Lt.-Colonel G. M. Sharp (Spen Valley—Lab.) on January 23 asked the Minister of Transport what success had been achieved to date by the European Central Inland Transport Organisation in the carrying out of its executive functions; what expenditure had been so far incurred; and how much would be borne by this country.

Mr. Alfred Barnes in a written answer stated: It is not possible within the limits of an answer to a Parliamentary question to give an account of the many and varied activities which this organisation carries on, but it publishes monthly a full report on the progress of its work. Its expenditure for the period November 1, 1945, to December 31, 1946, is estimated to be £400,000, of which £61,290 is the United Kingdom's share.

Railway-Owned Hotels

Mr. James Hudson (West Ealing—Lab.) on January 27 asked the Minister of Transport how many licensed hotels, licensed restaurants, and bars he proposed to transfer to public ownership under the Transport Bill now before the House.

Mr. Alfred Barnes stated in a written answer: I am unable to furnish the information required, but the railway companies own some 70 hotels (of which 19 are not at present in use) and have about 400 stations with refreshment rooms, most of which are licensed. This does not take into account canteens for staff.

Mr. G. C. Touche (Reigate—C.) on January 27 asked the Minister of Transport if he would state the number and estimated value of the hotels which it was proposed to acquire under the Transport Bill.

Mr. Alfred Barnes stated in a written answer: According to the main-line railway companies' accounts for the year ended December 31, 1945, they own 66 hotels, which will be acquired by the Commission under part II of the Bill. The capital expenditure on these hotels is shown as £9,785,000.

Freight Rebates Fund

Lt.-Commander Gurney Braithwaite (Holderness—C.) on January 23 asked the Minister of Fuel & Power whether he would furnish particulars showing how the £1,800,000 he had received from the Railways Freight Rebates Fund for the 12 months ended September 30, 1946, had been utilised for purposes connected with the production and marketing of coal; and how he proposed to utilise the estimated amount of £2,387,000 payable to him in respect of the 12 months ending September 30, 1947.

Mr. E. Shinwell (Minister of Fuel & Power): The £1,800,000 received from the Freight Rebates Fund in the year to September 30, 1946, has been paid as to £554,000 to the Coal Charges Account in relief generally of the costs of coal production, and as to the balance to the Vote of the Ministry of Fuel & Power in diminution of subsidies which have been paid to relieve consumers of part of the exceptional costs of conveyance of coal for inland use. The allocation of the further sums to be received has not yet been decided.

Abandonment of Canals

Major Elwyn Jones (West Ham, Plaistow—Lab.) on January 27 asked the Minister of Transport whether he would ensure that no canals were abandoned before the full inquiry into the position of canals by the proposed Transport Commission.

Mr. Alfred Barnes stated in a written answer: I have now before me two applications for authority to abandon lengths of canal under the provisions of section 45 of the Railway & Canal Traffic Act, 1888. While I could not delay my decision on these and any other applications made in the near future, I shall certainly have regard to the importance of the canals concerned in relation to the system of public inland transport contemplated in the Transport Bill.

L.P.T.B. Dismissals

Lt.-Colonel F. C Byers (Dorset Northern—Lib.) on January 27 asked the Minister of Transport whether he would state the number of employees of the L.P.T.B. who had so far been dismissed for failure to join the Transport & General Workers' Union.

Mr. Alfred Barnes stated in a written answer: Up to January 21, 1947:—176.

Export of Locomotives

Mr. Ralph Assheton (City of London—C.) on January 28 asked the President of the Board of Trade whether he would make a statement with regard to the export of locomotives, in view of the grave shortage of locomotives in this country and the serious effect of this on transport.

Mr. J. W. Belcher (Parliamentary Secretary to the Board of Trade), in a written answer, stated: The locomotive industry is making every effort to meet the requirements of the home railways, and arrangements are being made for the industry to provide many more locomotives for the home railways in 1947 than in 1946. Additionally, it is making an important contribution to the export trade, thereby not only meeting overseas demands essential to the maintenance of our imports of food and raw materials, but also maintaining a firm basis for export trade in the future.

Christmas Arrangements at Paddington Station

Mr. V. J. Collins (Taunton—Lab.) on January 29 asked the Minister of Transport if he was aware that unnecessary hardship had been caused to large numbers of Christmas-period passengers by the inadequate arrangements at Paddington Station; and if he would make an investigation with the object of avoiding chaotic conditions during the periods of heavy passenger traffic.

Mr. Alfred Barnes, in a written answer, stated: I regret that shortage of rolling stock and staff made it impracticable for the railway company to deal promptly with the heavy passenger traffic at Paddington during the Christmas period. The situation was aggravated by adverse weather conditions.

Special Train for Transport of Horses

Mr. Peter Freeman (Newport—Lab.) on January 29 asked the Minister of Transport if he was aware that 27 horses and their riders had been transported from Churston and Paignton to the South Devon Hunt at Haytor by a special train engaged for the purpose in December; how much coal had been required for that journey; how many men had been employed; and whether he would in future refuse to permit the use of manpower and fuel for such purposes during the present emergency.

Mr. Alfred Barnes, in a written answer, stated: Yes. A special train was provided because it was not practicable to convey these horseboxes by the ordinary services. About 30 cwt. of coal was consumed, but the engine used was one held ready in steam in case of need. Two sets of enginemen were employed, who would otherwise have been off duty that day, and a porter-guard, who was taken off platform duty. I have instructed the companies that special trains for social and sporting events should not, at present, be run.

Staff & Labour Matters

Locomotive Running Shed Wages

At a meeting of the Railway Shopmen's National Council on January 6 the trade unions submitted to the railway companies a claim on behalf of the workshop staff employed in the locomotive running sheds that systems of payment by results should be introduced for the men employed on the repair and maintenance of locomotives at running sheds, and that, pending the introduction of such schemes, the men should be paid a lieu rate of 33⅓ per cent. The employers' side of the Council promised to consider this claim, and, at the close of the meeting, the following official announcement was made on behalf of the National Council:—

"A discussion took place at a meeting of the Railway Shopmen's National Council held today, when the employees' side of the Council asked for consideration to be given to the introduction of a system of payment by results at running sheds, or, alternatively, that a 33⅓ per cent. lieu rate should be introduced. The companies' side undertook to consider the claim and agreed that a further meeting of the Council would be held by the end of January. It was agreed that, in the meantime, normal working should operate."

The Railway Shopmen's National Council met again on January 21, when the claim was again discussed; and at the conclusion of the meeting it was announced that an interim settlement had been reached. The official announcement reads as follows:—

"At a meeting of the Railway Shopmen's National Council held in London tonight, agreement was reached whereby workshop staff employed in locomotive running sheds on the repair of locomotives are to be paid an allowance of 33⅓ per cent. on their existing base rates for an ordinary week's work pending a conclusion being reached as to the practicability of introducing a system of payment by results for such staff. This allowance to be inclusive of the running shed differentials at present being paid. Payment of the allowance to commence as from Monday next, January 27, on the understanding that there is an immediate resumption of normal working."

The trade unions promised to use their influence with the men to get normal working restored immediately and an improvement in the output of locomotive repairs at the running sheds.

Under the settlement, a running shed fitter employed in a locomotive running shed in the London area will receive an increase of 16s. 8d. for a week of 47 hours, and the other workshop grades in the running sheds affected by the settlement will receive proportionate increases according to their basic rates of pay.

As the work in running sheds must proceed throughout the 24 hours of the day and at week-ends, the normal working of the men usually includes a certain amount of overtime and Sunday work, and the

men who are required to work extra hours on this account will receive a higher allowance. For example, in the case of a running shed fitter in London who works an eight-hour Sunday turn in addition to his ordinary week's work of 47 hours, his allowance would be 19s. 6d. for the week.

For some time before the submission of the claim to the Railway Shopmen's National Council on January 6, a "go-slow" movement had been in progress at the L.N.E.R. locomotive running shed at Stratford, London, which had seriously interfered with the availability of engines with consequent dislocation of train services; but at a meeting following the announcement of the settlement the men decided to resume normal working immediately.

A New Cold Store for Southampton Docks

As recorded briefly in our January 31 issue, the Southern Railway has completed plans for a new and improved cold store at Southampton Docks, and preliminary work on the site has begun already. The original cold store, which stood at Berth 40 in the Old Docks at Southampton, was destroyed almost entirely by enemy action in 1940. The new store will be erected at the western end of Berth 108 in the New Docks, a site which offers better road, rail, and sea facilities than the old one, enabling much speedier movement of cargo in and out of the store.

The new cold store will be constructed in reinforced concrete, with five storeys, giving space for 6,000 tons of meat, fruit, and dairy produce imported from Australia, New Zealand, South Africa, and elsewhere. It will be equipped with the most up-to-date refrigerating plant. Messrs. Scott & Wilson have been engaged as consultants for the fabric of the building, and Mr. Oswald Parratt, F.S.I., has been appointed Quantity Surveyor.

The work of construction is being carried out under the direction of Mr. M. G. J. McHaffie, Docks Engineer, Southern Railway, and the total cost is estimated at £250,000. The Ministry of Works has agreed to issue licences for each stage of the work, and the Ministry of Food has given the project full support. The building will be leased by the Southern Railway to the International Cold Storage & Ice Co. Ltd., the lessee of the old store.

B.A.O.R. Leave Trains at Hull

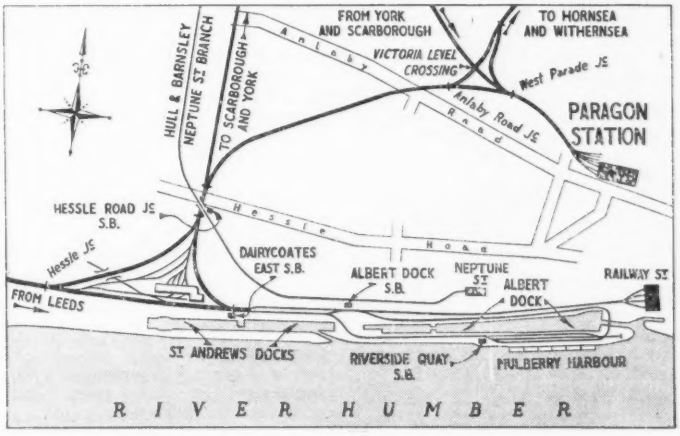
Before the war there was a weekly L.N.E.R. passenger service to Hull, Riverside Quay, in connection with steamships to and from the Continent. In common with many other parts of Hull, the Riverside Quay suffered serious damage during the war, and the timber portion fronting on the River Humber was practically destroyed by fire and high explosive.

When the War Department decided upon Hull as a "leave port" for the B.A.O.R., a row of "Mulberry" pierhead pontoons was placed in front of the damaged quay to act as a ship's berth, and Bailey bridges were provided to connect with the main quay, upon which certain ancillary buildings were also constructed by military labour. To permit direct transfer of military passengers between train and ship, three parallel railway tracks on the quay were reconditioned, with the necessary connections to provide two passenger lines and an engine run-round, and a new signal box was constructed close to the site of the one which had been destroyed.

The route from the quay is over a single line, tablet controlled, to a point near Albert Dock Junction, where it joins the independent goods line from Railway Street Depot by a trailing connection, and thence *via* Dairycoates East curve to Hessle Road Junction, where trains to and from the North proceed direct *via* York and trains to other parts are reversed to and from the Doncaster and Leeds line.

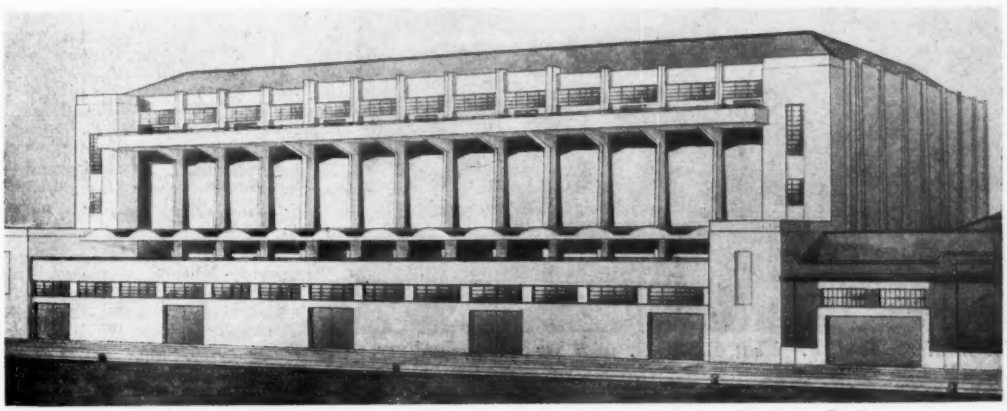
The lines over which the trains run as far as Hessle Road, normally are used only for goods working, and as the route from the quay to Hessle Road is athwart the normal direction of traffic movement, special measures have been introduced to safeguard the leave trains, including the provision of several sets of trap points at Dairycoates East and Hessle Road to give protection against conflicting movements.

The leave trains pass during a short period in each day, and the total duration of the traffic is also expected to be limited. Therefore, it was not considered necessary to carry out extensive signalling alterations, and the working of the trains is safeguarded by a system of Annett's locks fitted to levers at Dairycoates East, Albert Dock, and Riverside Quay signal boxes. The successive withdrawal of keys from locks at the first two cabins proves the position of the relative levers, and when he is in possession of the last key, the signalman at Riverside Quay is enabled to release the king lever which controls the frame, and to bring into use the tablet instrument. On the closing of Riverside Quay box, the procedure is reversed, and levers are freed for normal working.



Rail connections with the reconditioned Riverside Quay at Hull

Improved Cold Storage Facilities for Southampton



Artist's impression of the new cold store for Southampton Docks, Southern Railway

Notes and News

L.N.E.R. Stockholders Association.—The head office of the London & North Eastern Railway Stockholders Association Limited is now at 157, Victoria Street, London, S.W.1 (second floor) (telephone: Victoria 4023-4).

Mansion House Association on Transport.—The annual luncheon of the Mansion House Association on Transport will be held at the Connaught Rooms, London, W.C., on March 14, before the annual general meeting of the Association. The principal guest at the luncheon will be Mr. Alfred J. Barnes, M.P., Minister of Transport.

Assistant Accountant Required.—An assistant accountant is required by the Nigerian Government Railway for one tour of 18 to 24 months with possible permanency. Candidates, not over 32 years of age and preferably single, should be associate members or students of one of the recognised appropriate professional bodies. For full particulars see Official Notices on page 175.

Assistant Controller of Stores Required.—An assistant controller of stores, age between 28 and 35 years, is required by the Sudan Railways, for their extensive railways and steamers stores department in the Sudan. Applicants must have had wide experience of large-scale technical storekeeping, including control, purchasing, and accounting. See Official Notices on page 175.

Southern Railway Arranges Course on Stoking High-Pressure Boilers.—A three-day course of lectures and demonstrations, which ended on February 6, was arranged by the Southern Railway to show the most economical methods of stoking high-pressure boilers, as part of the general campaign for fuel efficiency. The course was held under the auspices of Mr. W. G. Pape, O.B.E., Fuel Efficiency Officer, Southern Railway, and arranged in conjunction with the Ministry of Fuel & Power, on behalf of which it was supervised by Mr. C. Kay and Mr. C. E. Paling. Representatives from the other three mainline railways and the L.P.T.B. were present.

Railway Passengers' Luggage Restriction Rescinded.—The Minister of Transport has revoked the Railways (Restriction of Passengers' Luggage) Order which was made in 1942, and provided that a railway company should not permit any passenger other than a member of the Forces, a merchant seaman, or a person proceeding abroad, to take with him personal luggage in excess of 100 lb.

Boiler Shop Superintendent Required.—A boilership superintendent is required by the Tata Locomotive & Engineering Co. Ltd., in its workshop at Tatanagar, Behar, India. Candidates, who should preferably be over 30 years of age, should have served a full apprenticeship in the boiler shops of one of the major British railways or a well-established firm of locomotive boiler builders. See Official Notices on page 175.

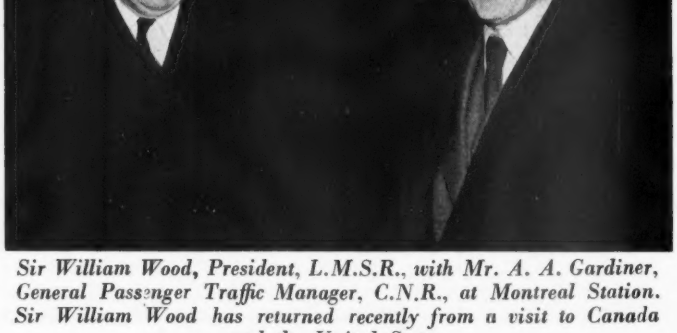
Vacancies in Nigeria.—Workshops progress officers, between 32 and 35 years of age, are required by the Nigerian Government Railway for one tour of 18 to 24 months, with prospect of permanency. Candidates must have served an apprenticeship in the machine shop of a British railway or reputable engineering firm, and subsequently have had good experience of up-to-date mass production methods. See Official Notices on page 175.

Gidea Park, L.N.E.R., Accident Inquest.—At the inquest on the seven persons killed in the collision at Gidea Park, L.N.E.R., on January 2 (see our January 10 issue), the jury returned a verdict of accidental death arising from serious error of judgment of the driver. Evidence was given by the signalman at Romford that the Peterborough train, which collided with a train to Southend in Gidea Park Station, had passed his inner home, starter, and advance starter signals, which were all at "danger."

Electrified Track Maintenance.—At the meeting of the Brighton Section of the Permanent Way Institution, held in the Lecture Room, Brighton Station, on January 28, Mr. J. Howard dealt with the varied work of the electric track lineman. The supply of current, the bonding of conductor and running rails, and the maintenance of the track were described in detail, and the need for close co-operation with the permanent way gangs was emphasised. The lecturer drew upon his wide practical experience in describing some of the faults that may develop on an electrified railway, and outlined the methods adopted in dealing with them with the minimum of delay, and without exposing the staff to unnecessary danger.

Collision Near Coatbridge, L.M.S.R.—On January 31 an Aberdeen to Perth and London mail train ran into the rear portion of a north-bound goods train which

L.M.S.R. President's Visit to Canada



Sir William Wood, President, L.M.S.R., with Mr. A. A. Gardiner, General Passenger Traffic Manager, C.N.R., at Montreal Station. Sir William Wood has returned recently from a visit to Canada and the United States

British and Irish Railway Stocks and Shares

Stocks	Highest 1946	Lowest 1946	Prices Feb. 4, 1947	Prices Rise Fall
G.W.R.				
Cons. Ord.	61½	54½	58	—
5% Con. Pref. ...	126½	107	121½	—
5% Red. Pref. (1950)	106½	102½	104½	—
5% Rt. Charge ...	140½	122½	134½	—
5% Cons Guar. ...	137½	118½	132½	—
4% Deb.	129½	106	124½	+ 1
4½% Deb	129½	107	123½	—
4½% Deb.	130½	114	125½	—
5% Deb.	142½	125	136½	—
2½% Deb.	95½	81½	92½	—
L.M.S.R.				
Ord.	30½	26½	29¾	+ ¼
4% Pref. (1923) ...	64	52½	61½	—
4% Pref.	86	75½	82½	—
5% Red. Pref. (1955)	105½	97	101½	— 1
4% Guar.	108½	100	104½	—
4% Deb.	120	103	113½	—
5% Red. Deb. (1952)	108½	105½	105½	—
L.N.E.R.				
5% Pref. Ord. ...	7	5	6¾	—
Def. Ord.	3½	2½	3¾	—
4% First Pref. ...	59½	50½	56½	—
4% Second Pref. ...	29½	25¾	28½	—
5% Red. Pref. (1955)	104	97	100½	—
4% First Guar. ...	107	98	102½xd	— 1
4% Second Guar. ...	101	90	96½xd	— 1
3% Deb.	104	87½	99	—
4% Deb.	119½	102½	113½	—
5% Red. Deb. (1947)	101	99	99½	—
4½% Sinking Fund Red. Deb. ...	107½	101½	102½	—
SOUTHERN				
Pref. Ord.	79½	70	76	—
Def. Ord.	24	19½	23¾	—
5% Pref.	125½	107	120½	—
5% Red. Pref. (1964)	115½	106½	112½	—
5% Guar. Pref. ...	137½	119	132½	—
5% Red. Guar. Pref. (1957)	115½	107½	112½	—
4% Deb.	129½	105½	124½	+ 1
5% Deb.	159½	125½	134½	—
4% Red. Deb. (1962-67)	113½	104½	109½	—
4% Red. Deb. (1970-80)	115½	104½	111½	—
FORTH BRIDGE				
4% Deb.	109	103	104½	—
4% Guar.	105	102	101	—
L.P.T.B.				
4½ "A"	133½	120½	127½	—
5% "A"	142½	130½	136½	—
3% Guar. (1967-72)...	108	98½	105	+ 1½
5% "B"	128½	117½	123½	—
"C"	64½	56½	63½	—
MERSEY				
Ord.	34	30	34	—
3% Perp. Pref. ...	76	69	73½	—
4% Perp. Deb. ...	117½	103	111	—
3% Perp. Deb. ...	98	81	92½	—
IRELAND*				
BELFAST & C.D.				
Ord.	8½	6	7½	—
G. NORTHERN				
Ord.	41½	31½	37	— 2½
Pref.	63¾	52	62½	—
Guar.	97½	78¾	96	—
Deb.	107	97½	106	—
IRISH TRANSPORT				
Common	19/2½	16/9	17/4½	— 4½
3% Deb.	107	100	104¾	— ¼

* Latest available quotation

OFFICIAL NOTICES

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

ASSISTANT ACCOUNTANT required by the Nigerian Government Railway for one tour of 18 to 24 months, with possible permanency. Salary £400, rising to £720 a year. Commencing salary according to war service. On salary of £400 a year there is a local allowance of £60 a year and for married men a separation allowance of between £84 and £204 a year, according to dependants. Outfit allowance £60. Free passages and quarters. Candidates, not over 32 years of age and preferably single, should be Associate Members or students of one of the recognised appropriate professional bodies and should have had experience in one of the following branches of accountancy:—

Railway Revenue and Station Accounts; Civil or Mechanical Engineering Accounts and Costing; Statistics by Punched-Card Systems; Calculation and Payment of Wages; Stores Accounts; General Double-Entry Book-keeping.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/16797 on both letter and envelope.

Sudan Government

SUDAN RAILWAYS require an Assistant Controller of Stores for their extensive Railways and Steamers Stores Department in the Sudan. Age 28-35. Applicants must have had wide experience of large scale technical storekeeping, including control, purchasing, and accounting. Preference will be given to candidates with engineering qualifications and commercial experience. Provident Fund contract for a minimum of 7 years, subject to 2 years' probation. Starting rate according to age, experience, and qualification in the scale £E.560-£E.1,100 with periodic increases on recommendation and ultimate prospect of promotion to higher scale. Cost of living allowance £E.180 per annum. Outfit allowance £E.60 if commencing salary does not exceed £E.700. There is at present no income tax in the Sudan. (£E.1 = £1 0s. 6d.) Unfurnished accommodation available at controlled rent. Free passage on appointment. Strict medical examination.

Application forms and further particulars may be obtained from Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1. Please mark envelopes "Assistant Controller of Stores."

APPLICATIONS are invited immediately for a post of Boiler Shop Superintendent with the Tata Locomotive & Engineering Co. Ltd. in their workshops at Tatanagar, Behar, India.

Candidates, who should preferably be over 30 years of age, should have served a full apprenticeship in the boiler shop of one of the major British Railways or a well-established firm of locomotive boiler builders.

Subsequent experience should include personal responsibility for actual locomotive boiler construction, preferably as Foreman or Assistant Foreman Boiler Shop, with up-to-date knowledge of plate development and marking off, machine flanging and press shop work, riveting, tubing, staying, caulking, and welding.

Salary according to qualifications and experience. The post holds very good prospects and an excellent salary will be paid to an experienced and competent man, but only really first-class men need apply.

Applications in writing, with full particulars of training and experience, to MESSRS. TATA LIMITED, 18, Grosvenor Place, S.W.1.

TANK LOCOMOTIVES, 0-6-0, 4 ft. 8½ in. track gauge, cylinders 16 in. x 24 in., tractive effort 21,600 lb., service weight 44 tons 13 cwts. First class condition, for sale.—Apply M.E. ENGINEERING LIMITED, 457, Finchley Road, London, N.W.3. Telephone: Hampstead 7481 (3 lines).

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following posts:—

WORKSHOPS PROGRESS OFFICERS required by the Nigerian Government Railway for one tour of 18 to 24 months, with prospect of permanency. Salary £630 rising to £720 a year, plus a local allowance of £24 a year and, for married men, a separation allowance of between £60 and £180 a year, according to number of dependants. Free passages and quarters. Candidates, preferably between 32 and 35 years of age, must have served an apprenticeship in the Machine Shop of a British Railway or reputable engineering firm, and subsequently have had good experience of up-to-date mass production methods and progress planning. Locomotive engineering experience and a full knowledge of jig and tool fixtures and of the speeds and feeds of machine tools are essential. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/16858 on both letter and envelope.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiment. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. *Price* 2*s*. *Post free* 2*s*. 3*d*.

THE RAILWAY SYSTEM OF JAMAICA. A general description of the system and its traffics, with an account of economic problems; the motive power used; and some features of operation. By H. R. Fox, B.Sc., M.Inst.C.E., General Manager, Jamaica Government Railway. Reprinted from *The Railway Gazette*, January 5 and 12, 1945. *Price* 1*s*. *Post free* 1*s*. 2*d*.

was being shunted at Whifflet Junction, near Coatbridge. At the moment of impact, the locomotive and some wagons of the goods train had been detached, and a few seconds later they ran into the wreckage caused by the collision. Slight injuries were received by 12 men, nine of whom were railwaymen, and the other three Post Office workers. None needed hospital attention.

Leyland Motors X-Ray Centre.—A self-contained X-ray centre, for the testing of ferrous and non-ferrous castings produced in the company's foundries, is being installed by Leyland Motors Limited at Farington. The equipment includes two X-ray units, one for the examination of aluminium castings, and one for use with iron and steel castings. Examination can be carried out either by X-ray photography, or by visual inspection of a shadowgraph thrown on to a fluorescent screen by a casting in the path of the rays.

G.W.R. Cross-Channel Ships.—The first of two G.W.R. cross-Channel ships now being built at Birkenhead was launched on February 6, and was named the *St. David*, by the Countess of Dudley, wife of the Earl of Dudley, Deputy-Chairman of the company. A sister ship, the *St. Patrick*, is expected to be launched in April. Both ships will accommodate 1,300 passengers, 50 motorcars, and 350 tons of freight, and will provide sleeping cabins for 400. Another G.W.R. ship, the *Great Western*, which until recently has been operating on the Fishguard-Waterford service, is being converted for oil firing, and will have improved accommodation.

Railways in the Cold Spell.—The recent severe weather first affected transport services seriously in the West of England, where snow blocked the Southern Railway between Exeter and Plymouth, and cut the G.W.R. Princetown branch. Later, blizzards spread to the North. The L.M.S.R. and L.N.E.R. routes from Manchester to Sheffield were blocked by snow on February 4, many branch line services in Yorkshire were suspended, and drifts closed the L.N.E.R. Darlington—Penrith line. The snowfall at Grantham caused part of the L.N.E.R. station roof to collapse, blocking the up and down lines. Also on February 4, a landslide interrupted the Southern Railway London—Hastings line between Wadhurst and Ticehurst Road, necessitating diversion of trains.

Institute of Transport.—At a meeting of the Institute of Transport to be held on February 10 at 5.30 p.m., at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, a paper on "Rail-Road-Water: Price Problems, Past, Present, and Presumptive," will be given by Mr. A. E. Sewell, M.Inst.T. The inaugural meeting of the Metropolitan Section will be held on February 14 at 5.30 for 6.0 p.m., at the Livingstone Hall, Broadway, S.W.1. An address will be given by Mr. J. S. Nicholl, C.B.E. (Past-President), and a discussion of the programme and other matters will be opened by Mr. A. L. Castleman, M.Inst.T., first Chairman of the Section.

Railway Benevolent Institution and Nationalisation.—The following statement has been issued by the Board of Management of the Railway Benevolent Institution, of which Sir Ronald W. Matthews is President and Sir Eustace Missenden, Chairman: "If the proposals set out in the Transport Bill are adhered to the Institution will suffer a loss of income of £10,589 a year (on the basis of a 2½ per cent. compensation stock) representing 41 per cent. of the income at present being received from railway holdings, which amount to £621,064. The income from investments for the year ended April 30, 1946, was £50,107, and the prospective loss of £10,589 a year represents 21 per cent. of such income."

South Wales Steel Development Scheme.—At a meeting with the Port Talbot & Aberavon Chamber of Commerce on February 6, Mr. E. H. Lever, Chairman of Richard Thomas & Baldwins Limited, announced plans for the formation of a new company to develop sheet and tinplate production. The company will be known as the Steel Company of Wales, and will take over the appropriate assets of Richard Thomas & Baldwins Limited, the Llanelly Associated Tinplate Companies Limited, Guest, Keen, Baldwins Iron & Steel Co. Ltd., and the Newport sheet works of John Lysaght Limited. Two new cold reduction mills are projected near Swansea and Llanelly.

Agreed Charges.—Applications for the approval of 52 further agreed charges under the provisions of section 37 of the Road & Rail Traffic Act, 1933, have been lodged with the Railway Rates Tribunal. Notices of objection must be filed on or before February 11 next.

Repairs to Dalton Tunnel, L.M.S.R.—The up and down tracks of the L.M.S.R. Carnforth to Barrow-in-Furness line have been interlaced for a distance of approximately 320 yd. through Dalton Tunnel (between Dalton Station and Park Junction), whilst relining of the tunnel is in progress. This method of working, involving special temporary signalling arrangements for single-line working through the tunnel, and minor adjustments in the timings of between 70 and 80 daily trains which normally might cross one another in the tunnel section, has been adopted in order to afford adequate clearance for the erection of scaffolding in the tunnel. The Dalton Tunnel is over 100 years old, being opened in 1846.

Forthcoming Meetings

February 11 (*Tue.*)—The Institution of Civil Engineers (South Wales & Monmouthshire Association), at the Talbot Hall, Mackworth Hotel, Swansea, 6 p.m. "The Application of Soil Mechanics to Highway Construction." by Mr. D. I. Richards, A.M.I.C.E.

February 15 (*Sat.*)—The Permanent Way Institution (Manchester & Liverpool Section), at the City of Liverpool Technical College, Liverpool, 3 p.m. "The Swedish State Railway," by Mr. C. E. R. Sherington, M.A., O.B.E., M.C.

Railway Stock Market

Apart from British Funds, which responded to Mr. Dalton's latest statement indicating confidence in his cheaper money policy, stock markets were inclined to lose ground, industrials moving back on the latest news of the effects of the fuel shortage. Movements were mostly small, the lower prices resulting more from falling off in demand than from selling, which appeared to be on moderate lines.

Argentine rails provided substantial gains earlier in the week on reports of a satisfactory agreement for the sale of the British-owned railways. Best levels were not fully held and main gains were in debenture stocks, first impressions being that if the agreement proves to be on the lines indicated by earlier reports, debenture stocks should be worth par, or some twenty points above the current levels at which many of them are quoted. Preference stocks also recorded gains on the view that they are also likely to prove undervalued at current prices. Although also higher on balance, ordinary stocks showed relatively moderate rises, because although if hopes are realised, they may also prove to be very moderately priced at current levels, it is difficult to take a very decided view pending official news of the agreement and the amount to be received in respect of the railways' ancillary or outstanding interests.

After the sharp gains recorded, there was a good deal of profit-taking, some recent buyers deciding to sell, bearing in mind the sharp fluctuations to which Argentine railway stocks have been subject from time to time. Only a week ago strong reports were current that the negotiations had ended in deadlock and as a result, prices were being marked back sharply. Profit-taking earlier this week, however, was followed by fresh buying, much of it speculative, because it is impossible to take a decided opinion until full details of the agreement are known, let alone assess the probable value of individual stocks.

Home rails have been firmer, presumably in the hope that now the Transport Bill has reached the Standing Committee stage, there may be possibilities of minor modifications of some clauses of the Bill. Despite the widespread opposition the proposals have aroused and the big fall in income that will be suffered by stockholders, there are not very sanguine hopes of major amendments to the scheme being accepted by the Government. The statements in the debate on the Electricity Bill clearly indicate that the Government is still of the opinion that Stock Exchange prices provide a fair compensation basis for stockholders, despite the strong arguments to the contrary, and the overwhelming case for an independent tribunal to determine compensation.

As in the case of electric supply shares, which also remain below their "take-over" prices, home rails, particularly the preference and prior charge stocks, have experienced steady institutional demand largely on calculations showing their attractions as a means of acquiring gilt-edged stocks, assuming that British Transport stock carries interest at 2½ per cent. and is issued at par. On the other hand, there has been a fair amount of public selling of home rails.

Nevertheless, in accordance with the general tendency, ordinary stocks have been inclined to firm up, it being pointed out that current prices can be regarded as carrying the final dividend payments in respect of the past year. Total dividends for 1946 seem likely to be somewhat below the rates which ruled for 1945, the view prevailing that because of the stipulations of the Transport Bill, it will probably be decided not to draw on reserves on this occasion. In some quarters, however, it is being suggested that the payment on L.N.E.R. second preference is likely to be maintained. Nevertheless, it seems probable that the main-line companies will follow a uniform policy whether to draw on reserves to keep dividends at 1945 levels.

Compared with a week ago, Great Western ordinary at 57¼ remained unchanged, but the 4 per cent. debentures gained a point at 124, and the guaranteed stock at 132½ regained an earlier fractional decline. L.M.S.R. (29¾) strengthened slightly, and the 4 per cent. debentures put on ½ at 114¼. L.N.E.R. second preference remained at 28½, and the first guaranteed was firm at 102xd. Southern deferred and preferred at 23¾ and 76 respectively were unchanged on balance; the 4 per cent. debentures at 124 moved fractionally higher. London Transport "A" and "B" stocks attracted buyers, current levels being well below "take-over" prices.

Argentine railway stocks rose sharply. Buenos Ayres Great Southern being 13, compared with 12 a week ago, while the 4 per cent. debentures have risen from 80 to 86. Buenos Ayres Western moved up from 14¾ to 15½ and the 4 per cent. debentures from 76 to 82. Central Argentine and Buenos Ayres & Pacific stocks were also well advanced in price and Argentine North Eastern "C" debentures jumped to 54.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1944/5	No. of Week	Aggregate traffics to date: Totals 1946/7	Aggregate traffics to date: Totals 1945/6	Aggregate traffics to date: Increase or decrease	Shares or Stock	Prices: Highest 1945	Prices: Lowest 1945	Prices: February 4, 1947
				£	£		£	£	£				
South & Central America	Antofagasta	834	26.1.47	33,340	+ 1,960	4	142,080	126,060	+ 16,020	Ord. Stk.	12	8¾	9½
	Arg. N.E.	753	25.1.47	ps.319,700	+ps.51,800	30	ps.9,464,200	ps.8,967,200	+ ps. 497,000	,,	10	5½	19
	Bolivar	174	Dec., 1946	4,279	— 863	52	51,910	58,425	— 6,515	6 p.c. Deb.	8½	5¼	6½
	Brazil	—	—	—	—	—	—	—	—	Bonds	25	17	26
	B.A. Pacific	2,771	25.1.47	ps.2,535,000	+ ps.84,000	30	ps.66,742,000	ps.65,001,000	+ps.1,741,000	Ord. Stk.	7	5	7½
	B.A.G.S.	5,080	25.1.47	ps.4,961,000	+ps.491,000	30	ps.103,548,000	ps.98,778,000	+ ps.4,770,000	Ord. Stk.	13¾	10¼	13
	B.A. Western	1,924	25.1.47	ps.1,691,000	+ps.368,000	30	ps.37,913,000	ps.35,648,000	+ ps.2,265,000	,,	12¾	9¼	15
	Cent. Argentine	3,700	25.1.47	ps.3,501,150	+ps. 8,900	30	ps.95,145,657	ps.92,252,650	+ ps.2,893,007	,,	9¾	7	10
	Do.	—	—	—	—	—	—	—	—	Dfd.	5	2⅞	5¼
	Cent. Uruguay	970	25.1.47	36,517	— 10,288	30	1,022,518	1,155,425	— 62,907	Ord. Stk.	7½	4	10
	Costa Rica	262	Nov., 1946	20,530	— 6,373	22	152,743	155,029	— 22,286	Stk.	16½	13	9
	Dorada	70	Dec., 1946	32,000	+ 3,124	52	369,575	359,365	+ 10,210	1 Mt. Deb.	103	102	100½
	Entre Rios	808	25.1.47	ps.451,900	+ps.25,200	30	ps.12,878,000	ps.12,648,400	+ ps. 229,600	Ord. Stk.	7½	4½	7
	G.W. of Brazil	1,030	25.1.47	40,600	+ 6,600	4	143,500	123,400	+ 20,100	Ord. Stk.	30/-	23/6	19/-
	Inter. Ctl. Amer.	794	Dec., 1946	$918,471	+$115,935	52	$10,462,386	$8,932,750	+ $1,529,636	—	—	—	—
	La Guaira	22½	Jan., 1947	$125,276	— $216	4	$125,276	$125,492	— $216	5 p.c. Deb.	78	70	65
	Leopoldina	1,918	25.1.47	64,978	+ 4,039	4	230,789	198,902	+ 31,887	Ord. Stk.	4½	3½	3¾
	Mexican	483	31.5.46	ps.1,464,000	+ps.459,100	22	ps. 7,706,200	ps.13,441,600	+ ps.5,220,200	Ord. Stk.	¼	¼	¼
	Midland Uruguay	319	Dec., 1946	14,771	— 6,303	26	109,866	115,875	— 6,009	—	—	—	—
	Nitrate	382	15.1.47	7,771	— 3,245	2	7,771	11,016	— 3,245	Ord. Sh.	75/6	67/6	75/-
	N.W. of Uruguay	113	Dec., 1946	4,837	— 1,288	26	32,945	35,276	— 2,330	—	—	—	—
	Paraguay Cent.	274	24.1.47	$67,373	+ $13,808	30	$1,893,560	$1,811,816	+ $81,744	Pr.Li.Stk.	79½	77	50
	Peru Corp.	1,059	Dec., 1946	147,153	+ 1,946	26	920,202	849,478	+ 70,724	Pref.	10⅜	7¼	8½
	Salvador	100	Nov., 1946	c90,000	— c1,000	22	c331,000	c467,000	— c136,000	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	60½	50½	130½
	Talcal	156	Dec., 1946	3,680	+ 480	26	29,410	15,520	+ 13,890	Ord. Sh.	17/-	10/6	18/6
	United of Havana	1,301	26.1.47	56,935	+ 409	30	1,489,437	1,406,832	+ 82,605	Ord. Stk.	3	1	1¾
	Uruguay Northern	73	Dec., 1946	1,242	— 637	26	7,887	10,943	— 3,056	—	—	—	—
Canada	Canadian National	23,482	Nov., 1946	9,282,000	+ 705,500	48	91,193,750	99,564,250	— 8,370,500	—	—	—	—
	Canadian Pacific	17,037	31.1.47	2,247,500	+ 168,250	4	5,839,750	5,827,250	+ 12,500	Ord. Stk.	24	14⅛	18½
Various	Barsi Light†	202	30.12.46	22,725	— 5,107	35	185,040	179,460	+ 5,580	Ord. Stk.	131	123	112½
	Beira	204	Sept., 1946	90,848	+ 17,136	52	950,694	920,575	+ 30,119	—	—	—	—
	Egyptian Delta	607	15.1.47	22,167	+ 1,560	41	465,630	437,730	+ 27,900	Prf. Sh.	10	8½	6
	Manila	—	—	—	—	—	—	—	—	B. Deb.	71	55½	74½
	Mid. of W. Australia	277	Nov., 1946	10,257	— 6,808	22	79,714	81,902	— 2,188	Inc. Deb.	97½	85	65
	Nigeria	1,900	Nov., 1946	461,603	+ 49,595	34	3,076,711	2,032,386	+ 1,044,325	—	—	—	—
	Rhodesia	2,445	Sept., 1946	541,147	+ 24,052	52	6,174,663	6,069,663	+ 105,000	—	—	—	—
	South African	13,323	4.1.47	993,925	+ 71,698	40	45,816,911	40,360,895	+ 5,456,016	—	—	—	—
	Victoria	4,774	Aug., 1946	1,188,889	— 54,185	—	—	—	—	—	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee